

The Canadian Medical Association Journal

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VOL. I.

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No. 2

Contents:

| | PAGE | | PAGE |
|--|------|---|------|
| Surgical Treatment of Gastric and Duodenal Hemorrhage. By G. E. Armstrong, M.D. | 103 | La Thérapeutique, Eclectique, Physiologique, et Philosophique. By D. E. Le Cavelier, M.D. | 172 |
| Exophthalmic Goitre. By Alexander McPhedran, M.D. | 115 | Medical Gynaecology. By Samuel Wyllis Baudler, M.D. | 173 |
| On Death and Disability Resulting from Childbirth. By H. M. Little, M.D. | 125 | Diagnostic Therapeutics. A Guide for Practitioners in Diagnosis by Aid of Drugs and Methods Other than Drug Giving. By Albert Abrams, A.M., M.D. | 175 |
| Two Cases of Typhoid Spine. By Jasper Halpenny, M.A., M.D., C.M., and Donald F. McIntyre, M.D. . . | 136 | Radium Therapy. By Dr. Louis Wickham and Dr. Degrais | 176 |
| Origin of Urinary Stone. By G. S. Gordon, M.D. | 141 | The Prophylaxis and Treatment of Internal Diseases. Designed for the use of practitioners and of advanced students of medicine. By F. Forchheimer, M.D. | 177 |
| CASE REPORTS | | RES JUDICATÆ | |
| Sarcoma of the Lung. By Eugene Saint Jacques | 146 | Postpartum Hemorrhage | 178 |
| EDITORIAL | | RETROSPECT OF MEDICINE | |
| Canadian Medicine | 149 | Obstetrics and Gynaecology | 181 |
| The Ontario Medical Council | 151 | Army Medical Service | 187 |
| Medical Education | 154 | Personal | 188 |
| Medical Inspection of Schools | 156 | News | 188 |
| Reporting Cases of Tuberculosis . . . | 158 | Obituary | 190 |
| Freedom in Practice | 160 | CANADIAN LITERATURE | |
| BOOK REVIEWS | | Original Communications | 192 |
| Surgery of the Brain and Spinal Cord. By Prof. Fedor Krause | 168 | MEDICAL SOCIETIES | |
| A Manual of Physiology. By G. N. Stewart, M.A., D.Sc., M.D. | 168 | Montreal Medico-Chirurgical Society . | 193 |
| A Text-Book of Bacteriology. By Philip Hanson Hiss, Jr., M.D., and Hans Zinsser, M.D. | 169 | Toronto Academy of Medicine | 194 |
| Modern Treatment. Edited by H. A. Hare, M.D., and R. H. M. Landis, M.D. | 170 | Canadian Hospital Association | 195 |
| | | Saskatoon Medical Association | 196 |
| | | West Elgin Medical Association | 196 |

The Canadian Medical Association

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The Canadian Medical Association Journal

VOL. I.

FEBRUARY, 1911

No. 2

SURGICAL TREATMENT OF GASTRIC AND DUODENAL HÆMORRHAGE

BY G. E. ARMSTRONG, M.D.

*Professor of Surgery, McGill University; Surgeon Montreal General
Hospital*

THE subject of my remarks is not, perhaps, stated quite clearly in the title which I give. It was selected rather hurriedly, and embodied an idea that I have had for a long time, of enquiring from patients operated upon, especially for benign conditions of the stomach, to ascertain how much benefit they had received from their operation, and if the marked improvements so generally noticed were permanent. I have not had time to do this as I should like.

It is a good plan, now and again, to review our work, to review it critically. We go on from day to day doing certain work in a certain way, and it is well occasionally to pass in review our methods and the methods of others, and to decide, if we can, whether or not there may be other ways of doing these things that would be safer and more expeditious. A great deal has been accomplished by improved technique in lowering mortality. A great advance has been made in lessening the period of disability after operation. This has been accomplished by adopting saner views on the subject of the repair of tissues, and, in stomach surgery, by more reasonable methods of feeding. I should like, if possible, to speak on some subject that would be interesting alike to physicians and surgeons. There are many circumstances under which the physicians and the surgeons are together responsible for advice given, and together they must shoulder grave responsibilities. In one such subject I have for many years been deeply interested. It

Read before the Academy of Medicine, Toronto.

possesses the added attraction of affording a delightful opportunity for argument and for differences of opinion.

The great majority of cases of hæmatemesis yield to the methods of the internist. So true is this, that in the small minority remaining he is sometimes very reluctant to admit defeat. Let us see if we can get any nearer together, and arrive at any better understanding of this matter.

At the meeting of the British Medical Association in London, in 1899, I reported a case of hæmatemesis that I had operated upon successfully. I became much interested in the pathology, morbid anatomy, and treatment of hæmorrhage from the stomach and duodenum. As this was, so far as I could ascertain, the first case treated in Montreal by this method, I had a careful search made in the post mortem records of the Montreal General Hospital, and found that in a series of two thousand autopsies fifteen had died of gastric hæmorrhage. In five of these fifteen cases the hæmorrhage was from a gastric ulcer, and in four from a duodenal ulcer. Of the remaining six cases, one was due to rupture of an œsophageal varix associated with thrombosis of the portal vein, and atrophy and sarcoma of the liver; one, from rupture of an œsophageal varix associated with hepatic cirrhosis; two, to leucocythæmia, and two, to rupture of aneurisms into the lower end of the œsophagus.

The origin of the hæmorrhage in the gastric and duodenal cases seemed to give distinct indications as to the method that should be adopted when an operation was undertaken for its relief. In three of the stomach cases the bleeding had taken place from an artery whose walls were ulcerated through, leaving gaping orifices into which a small silver probe could be introduced, in one no plugged vessels were found, and in one the opening was large enough for the blood to pour out freely. In one case, in addition to the large hæmorrhage, there was a small perforation of the anterior wall of the stomach.

Of the four duodenal cases, the source of the bleeding in one is not definitely known, as the case report cannot be found; in two, solution could be injected through the opening in a stream; and in the fourth, no mention is made of an open vessel being found in the base of the ulcer. From these post mortem findings I concluded that, if the hæmorrhage from a gastric or duodenal ulcer were sufficiently alarming to call for surgical interference, the operator should search for the bleeding point and secure the vessel.

When Mr. Moynihan's book on "Abdominal Operations" appeared in 1905, I was surprised to find that a gastro-enterostomy had, in all his cases, been followed by complete and permanent arrest of the hæmorrhage. With his preliminary remarks regarding the serious condition

of these patients, the difficulty and sometimes the impossibility of finding the ulcer, the plurality of ulcers in some cases, the adhesions to liver and pancreas in others, and the occasional continuance of the hæmorrhage after the direct treatment, one must agree. It was difficult, however, to believe that a gastro-enterostomy that could only succeed by rendering recurring distention of the stomach impossible, should be trusted when the blood came from the erosion of an artery large enough to admit a probe, and especially when the gaping vessel lay in the bottom of a hard, cicatricial ulcer that one would not expect to be very contractile.

A sufficient number of cases, operated upon by different surgeons and by different methods, have now been reported to enable one to make comparisons and draw certain conclusions. The subject is one of great interest and importance. The frequency with which death occurs from hæmorrhage in ulcer of the stomach is estimated by Leube to be 1.1 per cent.; Lenhartz, 1.6 per cent.; Moullin, 2.5 per cent.; Debove and Remond, 5 per cent.; Tuffier, 8 per cent.; and Muller, 11.6 per cent. The difference in these estimates is due probably to diagnosis and to the class of patients observed.

Since Mikulicz, in 1887, first operated for hæmorrhage from a gastric ulcer, many surgeons have operated in many ways, and yet the number of reported cases is surprisingly small. Harsl f collected 55, Borszecky, 78, and Finsherer, 123. That the number is so small is, no doubt, due to the reasons given by Kraft; namely, the good results obtained by medical treatment in a very large majority of the cases, the uncertainty of the indications for surgical interference, and doubt regarding important points of technique.

The experience gained in the autopsy room and at the operating-table has demonstrated that gastric hæmorrhage may come from deep, hard-walled and thick-based ulcers, from superficial erosions, and from slits or fissures in the mucous membrane, as described by Dieulafoy, or the minute ulcerations mentioned by F. J. Smith. The bleeding may be capillary, venous, or arterial.

The first question, then, to be answered by the physician and the surgeon is when surgical interference is indicated. This important question may be simplified by applying it to two distinct and generally recognized classes of cases; in the one the hæmorrhages are small and repeated at short intervals, and in the other the blood is brought up in large and alarming quantities.

In the first group the answer is comparatively easy. Operation should be performed when, in spite of other treatment, the small hæmorrhages continue to recur, and the patient becomes, as a result, increas-

ingly anæmic, when it becomes apparent that a fatal issue is imminent unless something radical is done.

In the second group the answer is much more difficult and it is here that differences of opinion frequently exist. My own answer is that when a second, or, at most, a third vomiting of several ounces of blood occurs after the patient has been placed at rest and received appropriate medical care, I firmly believe that the time has arrived when operation is the safe, conservative method, and that any other is attended by increased hazard to the life of the patient. Neither the quantity nor the character of the blood enable us to say with any certainty whether it is coming from an artery or from the capillaries.

If operation is decided upon, the details of technique are all important to the surgeon. In a general way, he may employ the direct or the indirect method of arresting the hæmorrhage. In the first he attempts to occlude the bleeding vessel, in the second he does a gastro-enterostomy. There are advocates for each method. Neither method has a monopoly of successes or failures. Is it possible to find some guidance in this maze of opinion?

It may be conceded that if a gastro-enterostomy can always be relied upon to control the hæmorrhage immediately and permanently, it should be the operation of choice, because it can be done quickly. No time is lost searching for the bleeding point. There is a minimum amount of blood lost during the operation, and in many cases it can be well done under a local anæsthetic. A simple gastro-enterostomy, however, does not fulfil these conditions. In many cases operated upon in this way the bleeding has continued and caused the death of the patient. Schlüssler's patient died of continued hæmorrhage after a gastro-enterostomy. Quenu lost a patient from continued hæmorrhage after a gastro-enterostomy. Krönlein mentions two, and Porges, Potherat, Delbet, Tuffier, Kocher, Dollinger, and Hartmann each one. Quenu estimates that after gastro-enterostomy twenty-five per cent. die. In other cases the result has been quite satisfactory. It is a pertinent question to ask why the bleeding is arrested in some cases and not in others. Gastro-enterostomy seems to have been first employed in the treatment of cases of repeated small hæmorrhages. It was found so successful that it came to be employed in large hæmorrhages. It was approved by the Heidelberg School and came to be considered the proper operation to perform. Further experience demonstrated its unreliability, and the internists, not without cause, came to distrust surgical methods in these cases.

In those that came to autopsy it was observed that the hæmorrhage had occurred from lesions in the fundus, at some distance at least from

the pylorus, or from superficial ulcers at, or near, the outlet of the stomach that were not associated with narrowing or spasm of the pylorus. The logical inference seemed to be that a gastro-enterostomy was indicated when the pylorus was stenosed, and when the bleeding came from a pyloric ulcer. In such cases the peristaltic waves were increased to force out the stomach contents through the narrowed orifice. A gastro-enterostomy here would lessen peristalsis, give rest to the stomach, and allow time for clotting in the bleeding vessel.

"Cannon and Blake's experiments on large cats demonstrated that gastro-enterostomy openings of various sizes at various parts of the stomach were inoperative unless the opening or stoma was in the antrum, that is, close to the pylorus. Otherwise, the food, even when fluid, was pushed through the pylorus rather than through the stoma.

"They conclude that the stomach is not a passive bag. During digestion the cardiac end slowly contracts, pressing its contents into the pyloric end. Over the pyloric end, during digestion, peristaltic waves are continually running, churning the food with the gastric juices and forcing the chyme into the intestine. Observations on the human stomach show that, as it empties, it shortens, especially along the greater curvature. Therefore the part of the stomach that is lowest when it is full or relaxed is not lowest as it empties. The pylorus then becomes the lowest point. Even if gravity drainage occurred, the pylorus is the natural outlet so long as the stomach retains its power of contracting."

Borszecky confirms these observations regarding the emptying and drainage of the stomach in dogs. He found that dogs in whose stomachs he had induced bleeding and then performed gastro-enterostomy died sooner and in larger numbers than did the control dogs in which he induced bleeding and then closed the stomach without gastro-enterostomy. These observations, as remarked by Kraft, would seem to show that when in the presence of pyloric stenosis there is increased peristalsis, and the increased peristalsis is the cause of the continued bleeding, a gastro-enterostomy opening may facilitate the emptying of the stomach, lessen the force and frequency of the peristaltic waves, and favour thrombus formation. If the bleeding then came from an eroded vessel in the base of a pyloric ulcer, the narrowed, contracted condition of the pylorus would suffice to close the opening of the bleeding vessel. If, however, the blood came from a vessel removed from the pylorus and therefore not to be closed by pyloric contraction or spasm, a gastro-enterostomy could not be expected to be effective in stopping the bleeding because it would not drain the stomach. The stomach contents would continue to pass by the pylorus and nothing would

pass by the gastro-enterostomy-stoma, and the only rest of the stomach to be expected would be that possible condition of temporary arrest of peristalsis due to the handling of its walls and the division of some of its muscle fibres, a sort of paralysis that would be of such short duration as to be effective only under very favourable conditions. That handling of the stomach and incision through its anterior wall is not an effective remedy for the bleeding from an ulcer is demonstrated by the seven cases reported by Salzer, Abbé, Michaux, Pringer, Hirsch, Keen, and Mixter. In these cases, failing to find the bleeding point, the stomach, after being emptied of blood, was simply closed. Two recovered and five died from continued hæmorrhage or peritonitis.

Even when the pylorus is narrowed, gastro-enterostomy is not always successful, as shown in the case of Schlusser's patient who died the day following the gastro-enterostomy, although the pylorus was very narrowly contracted. In one case of bleeding from an ulcer within a narrowed pylorus, von Eiselsberg performed gastro-enterostomy. The bleeding continued, and a few days later he reopened the abdomen, cut across the stomach below the anastomosis, and closed both ends. The patient recovered. In another patient in which there was also a narrowed outlet, he cut across the pylorus, closed both ends, and then did a gastro-enterostomy. This patient also recovered.

As evidence of the uncertainty of gastro-enterostomy as a means of arresting hæmorrhage, it may be mentioned that there are a number of cases on record in which, after a gastro-enterostomy had been performed with the object of securing a healing of recurring or intractable gastric ulcers, serious, and in some cases fatal, hæmorrhage has occurred later on.

It would seem safe, then, to conclude that a gastro-enterostomy in the presence of a normal or non-contracted pylorus did not secure sufficient rest to ensure thrombus formation in the bleeding vessels, unless perhaps under very favourable circumstances.

Two other procedures deserve but scant mention. One is tamponade of the stomach, which, I think, has failed in each of the two cases in which it has been employed; and the other is jejunostomy. This latter method has been employed in six cases. Five of these cases died, two from continued bleeding, two from peritonitis, and one from asthenia. The one patient that recovered was a man forty-six years of age, who, for sixteen years, had vomited blood after meals. After the jejunostomy the vomiting ceased, and he recovered. It was clearly not a case in which large hæmorrhages had occurred. The idea in performing jejunostomy was to give the stomach rest, allow time for clotting at the bleeding point, and to afford an opportunity of feeding the patient through the

fistula. As remarked by Kraft, who mentions these cases, the jejunostomy failed to secure rest because the peristaltic waves excited by the injection of food through the fistula were reflected over the stomach, and there was less rest than would have been obtained by keeping the patient quiet in bed and withholding all food by the mouth. In cases of hæmorrhage from a duodenal ulcer one would expect a gastro-enterostomy to be totally ineffective.

The control of hæmorrhage is a familiar act in the daily life of a surgeon. The methods employed are familiar and based upon the experience of centuries. The ligature and the cautery have their respective fields of usefulness. The first thought in the mind of a surgeon called upon to arrest bleeding is to put a ligature around the bleeding point. The employment of gastro-enterostomy or other indirect means of controlling hæmorrhage from the stomach has been adopted for two main reasons; first, the difficulty, or impossibility, of finding the bleeding point; and secondly, the difficulty of dealing with it successfully when found. The ulcer and its open vessel may be adherent to the liver or to the pancreas, or it may be within a thickened, stenosed pylorus and surrounded by adhesions. I think, however, that I have shown that indirect methods are untrustworthy and followed by high mortality due to continued bleeding. It seems quite clear, however, that the direct methods should be developed and perfected if the percentage of recoveries is to be materially increased.

If the bleeding is capillary, if it comes from superficial ulcerations or from fissures, the cautery may be used and, I think, may be trusted. When the bleeding is from a vessel of some size, say a recognizable branch of the coronary, the pancreatico-duodenal, or the right gastro-epiploic, it can only be secured safely by one method, and that is by ligature. In some instances this is best accomplished by passing the ligature behind the vessel by means of a curved needle. The tissues are often friable, but we know now that it is not necessary to pull the ligature tightly enough to rupture the intima. If it approximate the walls of the artery, an adhesive arteritis will certainly and safely do the rest.

When for any reason a ligature is impracticable, the plan adopted by Roux, in 1893, may be adopted. In three cases he tied the artery on both sides of the bleeding point. They all recovered. The double ligature is desirable for two reasons, it may be impossible to distinguish definitely the direction of the artery, and the ulceration may have eaten into the side of the vessel and the anastomosis be so free that ligature of one side would not be sufficient.

Excision of the ulcer has been practised in some cases. Roux excised the ulcer in two of his three cases. I would strongly urge that

excision of the ulcer should be reserved for exceptional cases. As a rule it is unnecessary, it consumes more time and is attended by some little increased loss of blood which these patients can ill afford. The same may be said of pylorotomy. It consumes valuable time, and should only be done when no other method gives promise of success.

In those cases where the source of the hæmorrhage cannot be found, the resources of the surgeon may be taxed to the extreme. If the pylorus is not narrowed it is difficult to appreciate in what way a gastro-enterostomy would be of any avail. So far, I have not met such cases. I think that if I did find such a case associated with a pylorus that was not narrowed, I should be inclined to do a pyloroplasty. A pyloroplasty should accomplish what a gastro-enterostomy is supposed to accomplish but which it does not; namely, lessen the force of the peristaltic waves by enlarging the outlet, and thus ensuring against any considerable degree of distention of the stomach, and it might possibly bring to light some small, bleeding ulcer in the mucosa, or submucosa, of the pylorus or beginning of the duodenum.

A new method of finding the ulcer is advocated by Rovsing of Copenhagen, and commended by Kraft. With the use of the gastroscope some of us are more or less familiar. In February, 1908, before the Copenhagen Medical Society, Rovsing advocated the use of the gastroscope introduced through the anterior wall of the exposed stomach to illuminate and render visible the bleeding point in cases being operated upon for hæmorrhage. In the same year he demonstrated the instrument before the German Surgical Congress. I have no experience with the instrument, but it has evidently been found very useful in a number of cases. It is said to resemble a large uretercystoscope. When the stomach is brought forward through the abdominal incision, a spot is selected in the anterior wall, midway between the lesser and greater curvature and about 5 cm. from the pylorus, where no vessels of any size are visible. Around this spot is placed a purse-string suture, leaving room for an incision 1 cm. long. After the incision is made the gastroscope is introduced and the suture tightened around it. The stomach is then distended with air and the light turned on, and it is said that the vessels in the stomach walls become plainly visible. An ulcer, cancer, or tumour would cast a dark shadow. If nothing is seen in the the anterior wall an opening may be made through the gastro-colic omentum and the posterior wall be brought into view. Kraft has adopted this method of finding the ulcers in five cases of gastric hæmorrhage and found it most useful. Four of his cases recovered and one died. The cause of the death in the fatal case evidently resulted from an accident. The gastroscope had been introduced; the bleeding point

was found on the posterior wall; and a suture was placed in position and tied, when suddenly the stomach became so hot that it could hardly be held in the hand. A maid holding the patient's hand received a severe shock. The patient died thirty hours later. She had received a shock of 220 volts. In reporting his cases, Kraft states that the vessels are seen very distinctly, and that at the bleeding point one sees the ulcerated vessel ending abruptly in a small dark spot in which may be a clot.

I have not been called upon to operate for gastric hæmorrhage since reading the reports of the use of the gastroscope or diaphanascope, but undoubtedly it is a method likely to prove most useful in certain cases and one certainly deserving of a trial. Theoretically speaking, its value may be found limited to certain special conditions. I think, that here, however, we may take John Hunter's advice, and not think, but try it. If it fails to show up capillary hæmorrhage or pyloric or duodenal ulcers it may prove of great value in cases where a small ulcer in the mucous membrane or the submucous layer, so small as to be invisible to the naked eye, has opened a vessel of some considerable size.

What results can surgeons show in cases operated upon for the arrest of hæmorrhage from ulcers in the stomach or duodenum?

Barszecky's and Finisher's combined statistics are as follows:

| | No. of Cases. | Recovered. | Died. | Mortality. |
|-------------------------|---------------|------------|-------|--------------|
| Gastrotomy..... | 7 | 2 | 5 | 71 per cent. |
| Gastro-enterostomy..... | 23 | 11 | 12 | 52 " |
| Cauterization..... | 5 | 3 | 2 | 40 " |
| Excision..... | 19 | 14 | 5 | 26 " |
| Ligature..... | 16 | 13 | 3 | 19 " |

Kraft adds nineteen cases, and the figures are then as follows:

| | No. of Cases. | Died. | Mortality. |
|-------------------------|---------------|-------|--------------|
| Jejunostomy..... | 6 | 5 | 83 per cent. |
| Gastrotomy..... | 7 | 5 | 71 " |
| Gastro-enterostomy..... | 30 | 14 | 37 " |
| Cauterization..... | 6 | 3 | 50 " |
| Excision..... | 23 | 5 | 22 " |
| Ligature..... | 17 | 3 | 17 " |

These figures must be taken as approximate, but not very conclusive. More instructive would be a series of cases including all the operations done in one hospital or by one operator, in which the conditions for which the operation was undertaken were clearly stated. One would expect a larger percentage of recoveries in cases of small repeated hæmorrhages than in patients vomiting large quantities of blood, on whom emergency operations were performed on short notice and under unfavourable conditions.

I have had nine cases of gastric hæmorrhage. Eight of them were

submitted to operation. The remaining case, a woman fifty-five years of age, was admitted to the Montreal General Hospital, January 25th, 1907, complaining of weakness and hæmatemesis. About the middle of the previous July she vomited blood, and fainted. She states that prior to this attack she had been in good health. In the following November she again vomited blood. She had not been well since the first attack in July. On January 25th, 1907, she vomited a considerable quantity of blood, and was sent to the hospital. On admission she was very weak and anæmic. Ice was applied to the epigastrium. No more vomiting occurred. On February 1st, she developed a pneumonia that proved fatal. The post mortem examination showed, in addition to an extensive broncho-pneumonia, a large gastric ulcer one inch in diameter, situated on the anterior wall of the stomach near the lesser curvature, about one inch from the pylorus.

My first operation for gastric ulcer was performed, July 25th, 1898. The case is reported in the *British Medical Journal* for October 21st, 1899. Briefly, the patient was a woman thirty-five years of age. She had vomited large quantities of blood daily for seven days in spite of rest, and ice, bismuth, acetate of lead, etc. Previous to the onset of the hæmatemesis she had not had any symptoms of stomach disorder. She was blanched, and had a pulse of 136 to the minute. I found three superficial ulcers on the anterior wall of the stomach; two resembled fissures, and one was stellate. From the latter, blood escaped at three points. The cautery was applied; the stomach and abdomen were closed without drainage. There was good recovery, and several years afterwards the patient was in perfect health.

Case II. Female, *æet.* 46. Operation, October 12th, 1899. Had suffered more or less from pain and vomiting coming on about two hours after every meal for eight months. Four days before operation she passed a large tarry stool during the day, and in the evening vomited dark brown coffee-ground matter, and was sent to the hospital. Ice was applied to the epigastrium, and morphia was given hypodermically. On the following day she was very comfortable. The next day she vomited coffee-coloured matter and blood clot, in all twelve or fifteen ounces. Twelve hours later she vomited similar matter. Her condition became very bad, pulse barely perceptible at the wrist. I found a deep, hard, excavated ulcer at the pylorus, excised the ulcer and did a pyloroplasty. Recovery. When she left the hospital she was able to take three good meals a day and was rapidly gaining weight, strength, and colour.

Case III. Female, *æet.* 27. Admitted March 29th, 1900. Had had pain in the stomach and more or less vomiting for seven years.

During this period had had six hæmorrhages, some of these described as quite large. She was transferred from the medical side for operation. On exposing stomach no indications were found as to the situation of the hæmorrhage. On opening the stomach, six ulcerated areas were observed varying in diameter from half an inch to two inches. Blood oozed freely from several of these. They were all cauterized. The pylorus seemed unduly contracted. Pyloroplasty to secure free emptying of the stomach, and to lessen the force of the peristaltic waves. Perfect recovery.

Case IV. Female, *aet.* 29. Admitted August 16th, 1900. Two years before admission she vomited a large quantity of blood. Since then has had indigestion. Two days ago she vomited six ounces of blood, and passed ten ounces per rectum. The following day she vomited twenty ounces of clotted blood, and passed a tarry stool. She became pulseless several times during the night. At operation eight ounces of bright blood were found in the stomach. Three linear ulcers were found at the lesser curvature, and nearer the cardiac than the pyloric end. In one of them was a distinct spurting vessel. It was secured by a ligature passed around the vessel by means of a curved, round needle. The other two were cauterized. Pyloroplasty to lessen the force of the peristaltic waves and to obviate distention. There was no further hæmatemesis or melæna. On the seventh day after operation, at 11.45 a.m., after drinking a cup of milk, she uttered a cry, and before the house surgeon, who was in the ward at the time, could reach her, she was dead. The post mortem showed double pulmonary thrombosis.

Case V. Female, *aet.* 30. Indigestion, pain, and vomiting for years. Repeated small hæmorrhages. Pyloroplasty and cauterization of small superficial ulcerated areas. Recovery unsatisfactory, no more bleeding but persistence of pain and vomiting. A couple of years later, at the request of her physician, I did a gastro-enterostomy. When last heard from she complained of continued gastric pain and occasional vomiting.

Case VI. Male, *aet.* 47. Admitted November 12th, 1907. When twenty-seven years of age, and apparently in good health, he had a very large hæmorrhage from the bowel. He nearly filled a chamber dish with blood, and fainted from weakness. During the next seven years he had several similar attacks, although less severe. The attacks were not preceded nor associated with any pain or digestive disturbances. There was then a period of fifteen years during which he was well and strong. Two months before admission he began to vomit every day about three or four o'clock p.m., bringing up the food taken

during the day. Five days before admission he vomited coffee-ground matter. The day following he vomited nearly a pint of blood two hours after dinner. Had passed several large tarry stools. On the day of operation he vomited a large basinful of liquid, mostly blood. He was as white as the pillow he laid on, pulse 140, small and soft. The condition seemed hopeless. With considerable misgiving I exposed the stomach. On the lesser curvature, rather anteriorly and three inches from the pylorus, could be felt a hard, large ulcer about one and a half inches in diameter. An opening was made in the anterior wall, and from the inside the ulcer was found to be a deep excavated ulcer admitting the tip of the index finger, and in the centre of the base was a gaping vessel which easily admitted a silver probe, and from which blood was escaping. The ulcer was excised and the stomach and abdomen closed without drainage. Smooth and uneventful recovery. This man returned in April, 1908, with symptoms that pointed to pyloric narrowing and gastric dilatation. I did a gastro-enterostomy. He left the hospital well and I have not heard from him since.

Case VII. Female, *aet.* 40. Admitted September 16th, 1907. Symptoms of gastric ulcer twenty-five years ago. Subject to bilious attacks. On the day before admission she had two large hæmorrhages, and vomited a quantity of blood in clots. The following morning had two more hæmorrhages, the first amounting to two cupfuls, and the second almost two quarts. On opening the stomach fifteen or twenty small ulcers were observed. Blood oozed freely from each one. Cautery applied and stomach closed. Recovery. This woman has remained in perfect health up to the present.

Case VIII. Female, *aet.* 31. Transferred from medical side January 25th, 1908. The report of this case cannot be found. My operation book says that small bleeding areas were found and cauterized, and that she made a perfect recovery.

In none of the eight cases operated upon was there any further hæmorrhage after operation. The case that died lived seven days, and five minutes before her death she was considered as saved and safe. I feel quite sure that the cautery has a place where it may be safely used in these cases, and that the same principles should guide the use of the cautery or ligature as would determine their selection in other situations.

EXOPHTHALMIC GOITRE

BY ALEXANDER MCPHEDRAN, M.D.

Professor of Medicine, University of Toronto

EXOPHTHALMIC goitre occurs with only moderate frequency in Canada. In the Toronto General Hospital in the five years ending December 31st, 1909, there were only fifty-five cases of this disease received out of a total admission of 8,489 medical cases, that is 65 per cent. In the last 4,000 of our own records there are twenty-three cases of exophthalmic goitre, a little over one-half per cent., or correctly .575, making nearly the same percentage in the two groups of cases.

SYMPTOMS: As in all diseases characterized by marked disturbances of the nervous system, the symptoms are complex and variable; they may occur in any sequence. They may come on simultaneously or appear gradually one after the other at varying intervals. The onset may be sudden, almost fulminant, but in such cases mild changes have probably existed for some time unobserved. More often the symptoms develop with moderate rapidity. In cases of preëxisting simple goitre it may be long before the occurrence of Graves' disease is recognized. It will be well to consider briefly each symptom in detail, at least the more important ones.

THE GOITRE: The gland is enlarged in most, probably in all, cases, but the increase in size is usually only moderate; it may be so slight as not only to have escaped the notice of the patient but as not to be possible to detect on examination. Even slight enlargement may be determined by examining whilst a mouthful of water is being swallowed, as the act raises the gland, which may lie lower in the neck. Murray, in 180 cases, found goitre absent in only eight. It is probable that even in the cases in which no enlargement can be demonstrated, there is always some increase and perhaps alteration in the intrinsic tissue of the gland. Mayo has found the gland not only enlarged, but also altered in all cases in which he has operated. In the early stage the gland is usually soft and uniform, but becomes denser and may be irregular with nodular masses embedded in it, especially if a simple goitre has previously existed. Its surface may feel granular on account of the increase in the size of the small lobules of which its structure consists. In rapidly growing goitre the vascularity is greatly increased,

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as is shown by visible pulsation, thrill, a loud bruit at the entrance of the arteries, especially the superior, in many cases by an apparent expansion of the gland with each pulsation and often a continuous murmur all over the gland like the venous hum in the neck in anæmia. These murmurs may be present when the gland does not appear enlarged. The gland may vary in size from time to time. It may increase after over-exertion or mental disturbance, also at the menstrual period. In some cases it increases gradually in size for some time, and then as slowly decreases, and this may be repeated several times. With the increase in size the general symptoms are usually aggravated, to improve again as the size diminishes, but this relationship does not necessarily exist. The symptoms may be most severe when enlargement of the gland is scarcely or not at all perceptible.

TACHYCARDIA: This is the most constant and important of the so-called tetrad of cardinal symptoms; and is often the earliest symptom observed by the patient. At first, the patient is conscious of it only after excitement or exertion, so that the occurrence of unusual cardiac throbbing from slight causes should arouse suspicion of commencing Graves' disease, especially in young women. The pulse is rarely under 100, and may be 150 or more per minute. The rapidity is usually constant and persistent, but it may at times fall to nearly normal. Some cases with a slow pulse have been reported; in these the heart action may have been previously very slow. The rapidity of the heart's action probably varies with the degree of thyroid-intoxication, and therefore with the severity of the symptoms. Slight excitement may greatly increase its rapidity of action. The palpitation is often the cause of the chief discomfort of the patient. The carotids usually show marked and rapid pulsation, and there may be a corresponding nodding movement of the head, as is not rarely seen in aortic regurgitation. The heart sounds are usually accentuated, often extremely so, at both apex and base, and accidental murmurs are frequently present. The cardiac impulse may be strong and widely diffused. The blood pressure varies. It may be low or high, in some cases very high. There is a wide difference between the systolic and diastolic pressure, but it is difficult to measure it accurately. There is, therefore, a large output into the aorta with each left ventricular systole, and a low state of arterial tension, a condition similar to that in well-marked aortic regurgitation. This, with the rapid action, shows the very great increase in the heart's work; there is, in time, consequent dilatation with more or less hypertrophy of the left ventricle. In these marked cases, there is great arterial throbbing in all parts of the body.

EXOPHTHALMOS: This is usually the most striking of the symptoms.

It is easily recognizable in about one-third of the cases, but in many others it is so slight as to have escaped notice. Such slight protrusion is difficult to distinguish from an unusually wide palpebral fissure. On the other hand, the protrusion may be so marked that the eyelids cannot be closed and the conjunctiva is visible both above and below the cornea. The degree of protrusion bears no relation to the size of the goitre or the severity of the general symptoms. The exophthalmos may be unilateral; more often it is unequal on the two sides. It may vary from time to time as does the goitre, and apparently from the same causes. It may have come on very gradually, or, in acute cases, appear with startling rapidity. In these latter cases it had probably existed to a slight degree and had not been observed. The condition giving rise to the protrusion of the eyes is uncertain. It has been attributed to various causes, such as orbital fat, congestion and œdema, spasm of the orbital muscle of Müller, often with weakness of the orbicularis, and to spasm of a cylindrical band of smooth muscle fibres described by Landström as arising from the orbital septum. There is no doubt that increase of orbital fat will cause exophthalmos. This is shown by injecting liquid paraffin or agar-agar through the optic foramen alongside the optic nerve in the head of an animal after removing the brain (Murray). Possibly more than one cause is active in most cases. At all events the thyreo-toxic substance seems to be the agent which excites these various causes.

In connexion with the exophthalmos, Von Graefe's and Stellwag's signs are important and frequently present, especially the latter. Von Graefe's signs consist in the lagging of the upper eyelid on looking downwards. It may be demonstrated by having the patient look at the finger or a pencil held horizontally before the eyes, and directing him to follow it as it is moved slowly downwards. If present the upper eyelids do not follow the movement of the eyeballs closely so that the sclerotics may become visible above the cornea. This sign, however, may be present in other conditions, and may possibly be voluntarily produced by some people.

Stellwag's sign is usually present and is one of the earliest signs. It consists in widening of the palpebral fissure due to retraction of the upper eyelids from spasm of the levator palpebræ superioris; the widening of the fissure is not caused mechanically by the protrusion of the eyes, nor is it necessarily proportional to the protrusion. This retraction gives the eyes a staring appearance, and with it is often associated a diminished reflex irritability which leads to infrequent and imperfect winking.

Weakening of the external ocular muscles often occurs, hence inability to hold the eyes in any fixed position for more than a short time, especially in convergence for near objects (Möbius' sign).

Tremor is regarded by Marie as the fourth of the most important signs, and equal in significance to any of the foregoing three. It is similar to that of an over-fatigued, healthy muscle. Its frequency is from eight to ten to the second, as in paralysis agitans. It is usually confined to the limbs. It may be the chief trouble of which the patient complains, or be so slight as to be recognizable only on close examination. It is best demonstrated by the patient holding the hands horizontally, with the fingers wide-spread, between the observer and the light. It is generally more marked when the patient is excited, and may be observed only then. It may be fairly recorded by the patient drawing a line slowly across a sheet of paper. It affects the whole limb and is not confined to the fingers only. It is usually equal on the two sides and seldom interferes with the movements of the hands in performing ordinary duties.

Weakness of the muscles generally is perhaps quite as characteristic a sign; it is seldom absent. Patients often complain early of weakness of the legs in walking, more noticeable in climbing stairs.

Emaciation is a marked feature in all acute cases and of the more chronic cases in which the disease becomes active. The loss of weight may occur rapidly and amount to as much as thirty to forty pounds. Its occurrence may take place notwithstanding that an abundance of food has been taken. The emaciation may be extreme and is then an evidence of grave prognosis. It is due to the greatly increased metabolism. There is, in severe cases, great increase in the excretion of nitrogen and of carbonic acid, and an increased consumption of oxygen, which may exceed the normal by fifty to seventy per cent., "an increase which occurs nowhere else in the whole range of pathology" (Magnus-Levy). If the metabolism diminishes, the condition improves and the patient regains flesh. In mild cases there may be no appreciable loss of weight.

The nervous system is always affected, profoundly so in severe cases, the general as well as the sympathetic system, and in many patients the nervous symptoms are the first to show themselves. There is discomfort, restlessness, some anxiety and apprehensiveness in all well defined cases. Many patients are irritable and excitable, and some are inclined to be wayward and wilful; such nervous disturbance is more common in females. They are easily upset by any unusual occurrence, whether pleasant or disagreeable. The mental state is unstable, as shown by these sudden changes of mood. Such cases may become

violent and require restraint; even the less marked cases may be subject to hallucinations and to ideas of persecution. But such changes are not frequent; yet they may be among the earliest symptoms.

Insomnia is frequent, partly due to the mental state and partly to feelings of discomfort from the sensation of heat caused by the full, dilated vessels of the skin. The nights may be restless and troubled with disagreeable dreams and walking in the sleep.

Patients are always more or less easily fatigued, even the mildest cases, an especially suspicious symptom in the young. This lack of endurance as well as the tremor are due to the nervous disorders.

The digestion is affected in nearly all cases. The appetite varies; it may be ravenous, but is oftener poor or even wholly wanting, especially when the patient is growing worse.

Thirst is usually marked and may be excessive. The increased appetite is partly due to the excessive metabolism, and the thirst to the profuse sweating.

Vomiting, without apparent relation to food, occurs in many cases, and may be a grave symptom. Dreschfeld pointed out that well defined acidosis may occur in severe cases. In such cases there was great prostration and dyspnoea, such as is observed in diabetic coma.

Diarrhoea in advanced cases is frequent. It is usually watery and painless. In most cases it lasts a few days and may recur from time to time. If acute, it leads to grave prostration.

The skin always shows some signs of defective vaso-motor control in the tendencies to general flushing and perspiration. The flushing occurs especially on excitement, but even when at rest the patient may have a feeling as if the blood were rushing to the head, and the face and neck become suffused and hot, and perspire freely. Increased moisture of the skin causes a lessening of the electrical resistance found in these cases. The occurrence of dryness of the skin would suggest the beginning of a myxoedema.

Pigmentary changes in the skin are frequent. The complexion often is sallow and sometimes distinctly darkened. There may be the general bronzing of the skin simulating that of Addison's disease; more frequently the pigmentation is more irregular. It may be limited to small areas, as the eyelids.

Circumscribed oedema, of brief or long duration, is not uncommon; it may recur from time to time. It is frequent in the extremities. Ascites occurs, but is infrequent.

Itching may be annoying. This doubtless is due to the toxic effect of the thyroid secretion, as it is sometimes experienced in persons who

are being treated with thyroid extract. It may be accompanied by erythematous and urticarial eruptions.

Trophic changes are also frequent, especially affecting the hair of the head, which becomes thin, dry, and falls out. The hair on various parts may be similarly affected. The teeth not rarely become carious.

Of the respiratory symptoms, dyspnoea, especially in exertion, is the most frequent. It is probably due, as a rule, to cardiac insufficiency. Hector MacKenzie (Allbutt and Rollston's System of Medicine, Vol. IV., Part 1, Page 371) describes rare, sudden attacks of dyspnoea of extreme gravity attended by lividity and swelling of the neck. These attacks are apparently due to the pressure of the suddenly congested thyroid on the trachea.

Menstruation may continue normal throughout the illness; usually, however, there is irregularity, often with menorrhagia. In some cases there is amenorrhoea. The existence of the disease does not seem to offer any barrier to pregnancy, not rarely, in fact, the condition of the patient improves during pregnancy, but in some cases the symptoms first appeared at this time.

DIAGNOSIS: In well-marked cases the diagnosis is a simple matter, as the symptom-complex, with ordinary care, leaves no room for error. The tachycardia, with one of the other characteristic symptoms, is almost conclusive, with any two it is quite so. The difficulty is with the mild cases—the *formes frustes*. We have to depend then on the other symptoms of thyroidism; e.g., emaciation and psychical disturbances; these with persistent tachycardia are usually conclusive. In such cases, slight degrees of tremor or exophthalmos, and of an enlarged thyroid gland, are rarely wanting, if carefully sought for. Cases with slight tachycardia and mild nervousness are often not diagnosed because this possible cause is overlooked, and the examination is not carefully made. The existence of simple goitre may mislead, but the co-existence of such vascular disturbances as already described is sufficient for a correct diagnosis. In these doubtful cases sometimes small doses of thyroid will cause such an increase of the symptoms as to make the diagnosis certain.

Tachycardia from other causes must be differentiated, especially when there is an enlarged thyroid gland. An enlarged gland may extend into the anterior mediastinum and obstruct both respiration and circulation. There may be dyspnoea from other causes. With an enlarged thyroid gland there may be associated exophthalmos from other causes, such as intracranial tumour with increased pressure. In some cases of tuberculosis with emaciation, the palpebral fissure is wide, giving a staring appearance. This must be carefully differentiated.

In marked anæmia, especially in young girls, the action of the heart is rapid; there is considerable emaciation and they are easily fatigued. The blood in such cases, however, is fairly indicative.

COURSE AND PROGNOSIS: The course of even the mildest attack and the ultimate result are quite uncertain in any individual case. The more severe the symptoms,—tachycardia, emaciation, prostration, vomiting, diarrhoea, tremor, psychical disturbance—the graver the outlook. The milder the symptoms and quieter the course, the more hopeful we may be as to the result, but in even these, sudden exacerbations are not uncommon. Of even the most severe, however, many are ultimately restored to fair health. The longer exophthalmos lasts and the more marked it is, the less probable is it that it will entirely disappear. So it is also with the enlarged thyroid gland.

Acute cases often run a rapid course. They are relatively frequent in children, in whom cases of recovery are reported in from a few days to a few weeks. Many recover in three or four months. Unfortunately a fatal ending may also occur within a few weeks.

The chronic forms are more common. The duration is very uncertain, as is also the ultimate termination, especially in the more grave cases. There were 105 fatal cases out of 900 collected by Buschan. The percentage of mortality varies, probably from about five to fifteen per cent. The outlook in children is more favourable, but even in them, there may be slight, persisting exophthalmos and enlargement of the gland.

Cardiac weakness is the most common cause of death; exhaustion from vomiting and diarrhoea and toxæmia is less common. Terminal infections, such as pneumonia and tuberculosis, are not rare causes of death.

Relapses are not rare and may be repeated. Trousseau reported the case of a lady who had six relapses in as many years.

Myxœdema may occur as a sequel; it may show itself even while the exophthalmic goitre is still present. It may follow rapidly, or not for a long time, after recovery from the exophthalmic goitre.

TREATMENT: In any disease for which we have no specific remedy or method of treatment, and in which the course is so uncertain in duration and subject to such erratic changes for better and for worse, it is difficult to estimate at its proper value anything that may be done.

If the symptoms are due to hyper-thyroidism, that is, are thyreotoxic, then an antitoxic agent should offer the best means of cure. So far success in this direction has not been satisfactory. The milk of thyroidectomized goats has been given, sometimes apparently with considerable benefit. Rodagen has been used in place of the milk,

as being more convenient. It is composed of the dry residue of the milk with an equal quantity of sugar added to preserve it. Its use in some cases has also been followed by fairly satisfactory results. The anti-thyroid serum prepared from the blood of thyroidectomized goats has also been employed, but it is very expensive, much more so even than rodagen, and the results probably equally uncertain.

On the other hand, if the disease is first a neurosis, as seems probable, a restoration of the normal function of the nervous system should result in a cure, and probably does so, but the restoration of the normal function is difficult, too often it is more than the means at our disposal will accomplish. In this state of uncertainty our aim in the medical treatment should be, (1) to correct the neurosis, and, (2) to counteract the effect of the perverted thyroid secretion and restore the gland to a normal state.

Of the means at our disposal, rest, mental and physical, is probably the most important; it should be adjusted to the needs of each patient; this with time will restore many to health. The diet should be free, so as to make up for the excessive waste, but should not contain an excess of protein or fat. The rapid action of the heart is usually aided best by rest, and until rest is secured drugs do little good. Digitalis and strophanthus have long been used, but their beneficial effect is doubtful, except in cases in which the heart is weak and dilating. Tincture convallaria, ten to fifteen minims three times a day, is recommended by Murray. Tincture of belladonna, in similar doses, has a steadying effect upon the heart and nervous system, possibly by lessening the gland secretion. One of the bromides, about thirty to forty, or even sixty grains, at bed time, given for a few days and repeated as indicated, often does much to relieve restlessness and sleeplessness in the specially nervous cases. For such cases fresh, cool air and quietude are of much importance. A tepid bath, about 95° F. at bedtime, may prove quieting and aid sleep.

Quinine hydrobromate in five grain doses four times a day has given remarkably successful results in Forchheimer's hands. If no effect on the tachycardia is produced in forty-eight hours, he adds one grain of ergotin to each capsule of quinine. He has never seen any permanent bad effects even from the prolonged administration of these drugs. Under their use he has found the tachycardia disappear, then the goitre, and later the protrusion of the eyes and the tremor. These results have taken place in from four months to three years. He has had only five failures in forty-one cases, and these were cases showing very acute symptoms. If further experience bears out these results, we may regard the treatment as satisfactory for the ordinary cases.

In the following case the termination was satisfactory:

Mrs. M., aged thirty-five, three children, the youngest six months old, was gravely ill when first seen. There was only slight exophthalmos and moderate enlargement of the thyroid, but the tachycardia, tremor, flushing, and general nervousness were very marked. After a month's rest and care, she improved somewhat and went home, but soon returned with all the symptoms greatly aggravated. She was isolated under good nursing care, and given quinine hydrobromate grains 5, ergotin grains 1, three times a day. There was no improvement for over six weeks. She was so ill that operation had been regarded as inadvisable. There was slight improvement by the end of two months; she continued to gain with frequent slight relapses and was soon able to walk out a little. After this the improvement was more rapid and she returned home. Gaining steadily, after a few months she resumed her household duties and has continued them since. She is now in good health; she gave birth to a child a few months ago without any return of symptoms. It is difficult to say how much her recovery was due to the quinine hydrobromate and ergotin, and how much to the prolonged rest and care, but the restoration is at least quite as perfect as in any of the operated cases.

For the goitre, especially if increasing, iodine in some form sometimes is of benefit, but it must be used with caution as it may increase the symptoms, as is to be expected if iodothyron is the chief cause of the symptoms of the disease. It may be given as iodide of potassium or sodium in small doses. Syrup of hydriodic acid is often better borne. Locally iodipin is sometimes employed with advantage. Of the twenty-five per cent. preparation, half a drachm may be gently rubbed daily into the skin over the thyroid.

Electrical treatment has long been in use. It was first introduced in the hope of influencing the sympathetic in the neck, one pole being placed on the back of the neck and the other over the sympathetic on each side in succession and a weak current used. One pole may be placed over the eyes, the thyroid, and the præcordium. Both faradism and galvanism have been used, some recommending one and some the other, so that the effect is probably largely, if not wholly, psychical. "A mild faradic current for two or three hours daily is often beneficial" (Murray).

Treatment by Röntgen rays has not been successful, nor has thyroid therapy proved useful except in some late cases in which considerable atrophy of the gland has probably taken place.

Of other drugs, the most useful are iron, arsenic, and phosphorus; these with suitable rest, mental as well as physical, at the same time

encouraging the patient's hopefulness, often accomplish much in time, which may, however, be long, so that the patience of both patient and physician may be severely taxed.

SURGICAL TREATMENT: In view of the large number of cases which make unsatisfactory progress, the principles that should guide us in referring them for operation are of much importance. The results of the early removal of the thyroid gland, or a part of it, have been so favourable in the experience of some leading surgeons, that they regard any other course as almost futile and marshal statistics in support of their position. However, statistics are not always reliable guides. In a recent paper (*Munchener Wochschr*, March 29th, 1910), Albert Kocher says that in the last ten years one thousand surgical cases have been reported and only one hundred medically treated. From these statistics he infers that few cases are content without surgical treatment. He overlooks the fact that many of the cases for operation seek the services of surgeons of wide reputation for such work, men who wisely publish their results, and this is the chief source of the one thousand cases on record. On the other hand, relatively few seek the advice of any group of physicians, even of those who have given much attention to the disease, the majority remaining under the care of their own physicians, and hence few of them are reported. Of the twenty-one medical cases treated in the Toronto General Hospital during the last five years, eighteen were relieved and three unimproved. Of the latter, one whose history is given in full above, was afterwards cured. None of the cases died. Forchheimer treated forty-one cases with only five failures and these latter were so severe as to be unsuitable for operation. These two groups make up sixty-two cases, more than half of all collected by Kocher, and yet none of them had been reported.

Notwithstanding these facts, the medical treatment of exophthalmic goitre too often fails to be satisfactory. In early cases, therefore, the wisest course seems to be to have the gland removed while the symptoms are still mild, if satisfactory improvement does not take place after a few weeks treatment, provided the operation is done by a surgeon who has had special training in this work.

ON DEATH AND DISABILITY RESULTING FROM CHILDBIRTH

By H. M. LITTLE, M.D.

Lecturer in Obstetrics, McGill University, Montreal

RECORDS of failures, though less frequently reported than those of successes, are perhaps more instructive. I have decided to bring before you certain facts relative to death under labour and to the more or less permanent disability resulting from labour, based on the records of cases that have been under treatment in the Montreal Maternity and in the gynæcological outdoor department of the Montreal General Hospital. For permission to use this material I am indebted to the respective heads of these Departments, Professors Cameron and Lockhart. They, however, are in no way necessarily responsible for any of the conclusions I have drawn. By an analysis of these results I shall endeavour to determine, first, whether any of the deaths might have been prevented by different treatment of the patient; and second, in how far the early and later care of puerperal patients could be held responsible for the disabilities of which they subsequently complained.

From the opening of the new Maternity, October 17th, 1905, to October 1st, 1909, there were treated at that institution some 2,634 patients. Of these thirty-five died. It is admitted that this 1.33 per cent. unexpurgated mortality is unusually high, as indeed is shown by comparison with the records of other clinics, where the mortality varies from 2.8 per cent. (Olshausen, Berlin) to 0.56 per cent. (Von Herff, Basel). But no patient seriously ill was refused admission even post-partum, and during the entire four years no patient whose death seemed imminent was allowed to be removed from the hospital.

Without minute details the causes of death may be summarized as follows:

| | |
|---------------------------------------|----|
| Eclampsia | 8 |
| Nephritis with general anasarca | 3 |
| Vomiting | 3 |
| Toxæmia | 14 |
| Infection | 13 |
| Hæmorrhage | 1 |
| Placenta prævia | 2 |

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| | |
|---|--------------|
| Cardiac disease | 2 |
| Rupture of uterus | 1 |
| Pyelitis | 1 |
| Bronchitis | 1 |
| | — |
| Total | 35 |
| In other words:— | |
| Deaths from one or other form of toxæmia.... | 40 per cent. |
| “ from infection..... | 37 per cent. |
| “ from all other causes, including placenta prævia | 23 per cent. |

This relative frequency of the causes of death was a surprise, but on again examining the statistics of other countries and clinics I find much the same relation in Great Britain and Ireland (von Winckel, iii, 2, 380). It is interesting to note from Boxall's statistics that .65 per cent. is the mortality rate in childbed in Ireland, and that, roughly, forty per cent. of these deaths are due to puerperal fever. In England and Wales the mortality from fever in the puerperium rose from .18 per cent. in 1847-56 to .228 per cent. in 1875-84, and to .245 per cent. in 1886-95. The importance of my theme then seems justified, particularly when deaths from fever take second place to deaths from a more combatable condition, the toxæmias of pregnancy.

Let us consider first the more or less unusual causes of death, and return later to the question of toxæmia and infection.

The loss of a patient with bronchitis, who developed pneumonia on the thirteenth day postpartum and died as the result, cannot, I think, be accredited to lack of obstetric care. Moreover, pyelitis is not essentially obstetrical, and when, in that case, we had done all that seemed indicated, notably the induction of labour and the removal of the fœtus as an aggravating cause, the condition became surgical, and death may be ascribed to a surgical, rather than to an obstetrical, complication.

Rupture of the uterus, either spontaneous or traumatic, is usually evidence of absolute mismanagement. In the case here recorded, a transverse presentation, *recognized*, had been left alone in the belief that spontaneous evolution might occur; the patient was brought to the clinic with a tear extending through the uterus from the cervix to the fundus and the placenta was free in the abdominal cavity. To await spontaneous evolution signifies obstetric incompetence.

An autopsy was not obtained on either of the two patients dying of cardiac disease, and in both a clinical diagnosis of myocarditis was made, though one of the two had, as well, extensive enlargement of the

thyroid and marked tachycardia. Both died as a result of labour, and neither was under treatment immediately prior to the onset of labour. Apart from these two, the hospital records show some forty cases carried through pregnancy and labour in spite of advanced cardiac disease, and we have lost no such cases where the patient came under observation with, or before, the first evidence of loss of compensation. This conservative handling of the patients with heart disease and the excellent results of treatment have already been the subject of an extensive review by Professor Cameron.

The two cases of placenta prævia died, one from thrombosis on the tenth day of an otherwise uneventful puerperium, and the other immediately after delivery, when, in addition to the placental condition, a concealed hæmorrhage—a clot weighing over 1,000 grms.—was made evident. The latter patient entered *in extremis*, but it is likely that as satisfactory, if not a more satisfactory, result would have been obtained by infusing the patient and attending to her general condition before attempting delivery. The first of these two shows the importance of care in handling this class of case, as the bacteria normally in the vagina, though unimportant in the consideration of general uterine infections, may be responsible for the extensive propagation of thrombi at the placental site, which must in any case be a source of danger on account of the thinness of the lower uterine segment. The danger from hæmorrhage, while grave, is subject to control by tight packing. Of the management of placenta prævia I am not, in the light of some ten or eleven cases, competent to give advice. I have, however, learned that the grave danger is infection, that the life of the child is negligible, and that the chief danger lies in the extensive tears resulting from delivery on account of the condition of the lower segment of the uterus. All of which suggests the value of simple rupture of the membranes in cases other than that fortunately extremely rare condition, *central placenta prævia*.

HÆMORRHAGE

Postpartum hæmorrhage should not appear as a cause of death under labour, and depends very largely on the care and conduct of the third stage; for if the placenta comes away entire, and there is no extrinsic obstruction to the contraction of the uterus, there will be no hæmorrhage. Atony of the uterus should have gone with milk fever. True, there are certain cases where the uterus, too rapidly emptied, has not acquired the habit of contraction; yet, in the majority of cases, the failure to contract will be found to be either in a full bladder or rectum, or in retention within the uterus of some portion of the placenta, or of clots. The placenta under ordinary circumstances is ready for expres-

sion within half an hour after the completion of the labour, and I have never seen good come from waiting longer than this before attempting its expression, a manipulation with which every obstetrician should be familiar. It is well to remember that a curettage prior to the pregnancy may seriously modify the manner of attachment of the placenta, and that, where such an operation has been undertaken, it is more than likely that the placenta may have to be removed manually. However, if the placenta comes away intact and there is bleeding, obviously not due to some laceration of the perineum or cervix, the first thing to do is to make sure that the bladder is empty. A full bladder holds the uterus up and back, and prevents an automatic shutting off of its cavity. If the uterus remains soft, squeeze out the clots, and the mechanical irritation may be sufficient to keep the uterus contracted. Ergot administered by the mouth is slow to act, and when given hypodermically the drug seems to have such a strong effect upon the muscle that within a few minutes the relaxation may be even greater than before its administration. When given hypodermically, deep into the muscle, (it should never be given subcutaneously), administration by mouth at the same time is advisable.

Much has been written about the value of the hot douche. I have never seen a hot douche do any good in the control of hæmorrhage, and carelessly prepared and carelessly given it is far more apt to do harm. A sterilized bandage, which takes but little room in an obstetric bag, makes an excellent pack, either for the uterus or for the vagina, and is one of the safest and surest methods of controlling hæmorrhage otherwise intractable. The new device, suggested by a German surgeon, Momberg, is also of the utmost value in emergency cases. A rubber tube is tied about the body about the level of the umbilicus, compressing the abdominal aorta. This measure, while under ordinary circumstances safe, has occasionally given rise to serious results and should be reserved for rare cases of sudden, severe, uncontrollable hæmorrhage and then used without the slightest hesitancy. The tube should be drawn very tight and should compress the abdominal aorta till the pulse in the femoral artery is occluded. When this has been done, the uterus will be found to be more or less in tetanic contraction, and this contraction will persist so long as the ligature is left in place.

It is worthy of note that postpartum hæmorrhage is entirely relative, that is, one patient may suffer more from the loss of 300 c.c. of blood than would another patient from the loss of four times that quantity. The average blood loss in an ordinary labour is about 350 c.c., or 12 ounces. This loss does no harm, and is, I believe, of value in douching out the vagina after the completion of labour.

INFECTION

Of thirteen cases dying as the result of infection, seven came to the hospital after treatment outside; four had been delivered; two partially delivered; and one, a placenta prævia, had been repeatedly examined. Another case with a streptococcus, sore throat died of peritonitis within a few hours of delivery, and the child likewise died of streptococcus septicæmia. One case of Cæsarean section died after operation, as did also one case upon which pubiotomy was done. In both of these last there was evidently some fault in technique, such as is apt to occur with a major operation. For the three remaining cases there is no possible excuse. Two of the patients were delivered spontaneously and one by a low forceps operation, all within two weeks of one another. Now, while these three are but a small percentage of the cases with fever, a still smaller percentage of the total of cases delivered, they are important, occurring as they did together, and as being the only three deaths from fever among our own cases in the hospital.

From the cases that have been admitted partially delivered or delivered, and have died of fever, we have been able to draw some conclusions as to the reason of our own relative freedom from severe infections. It is to be found in the preliminary care of the patient and the care with which internal examinations are made. None of the patients admitted, who died later, had had sufficient preparation of the vulva prior to vaginal examination or operation, while in one or two cases, at least, reliance had been placed upon a preliminary vaginal douche. In the Maternity we have tried to be scrupulously careful about the cleansing of the vulva after shaving with a safety razor, and under no circumstances has a vaginal douche been used ante partum, even where profuse vaginal secretion was present due to the gonococcus. In these gonorrhæal cases the only special care was to *avoid* vaginal examination with the possibility of carrying the infection into the cervix. The result has been that a large number of cases with acute gonorrhœa in pregnancy have been delivered without any ill effect, solely on account of the conservative manner in which they had been handled. Krönig of Freiberg, possibly the leading gynæcologist and obstetrician of Germany to-day, has gone so far as to suggest that no cleansing of the vulva should be undertaken in the management of the labour, because, as he says, nothing short of shaving the vulva and disinfecting as for a major operation, can be satisfactory. He substitutes for vaginal examination a rectal examination. Either of his suggestions are worthy of consideration. For my own part, it is with extreme rarity that I make a vaginal examination, relying for the diagnosis on external

palpation and rectal examination to determine the amount of dilatation of the cervix.

Where an operation is necessary, the shaving and disinfection of the vulva allows the introduction of the hand into the vagina with absolute security. In the Maternity where all the patients are shaved alike for vaginal examination and for operation, the operative cases show a lower percentage of morbidity than do ordinary normal cases; that is to say, the morbidity varies with the technique of the vaginal examination, which differs in the two classes of cases only in the application of permanganate of potash and oxalic acid to the vulva of those under an anæsthetic.

TOXÆMIA

It is difficult to fix a definite classification of the toxæmias, particularly of the eclamptics; for a patient with nephritis, who develops convulsions, or becomes comatose, may be indexed either as eclamptic or uræmic. Eight deaths from eclampsia would suggest a high mortality, yet in forty cases of undoubted eclampsia that passed through my hands, there were but four deaths, ten per cent., and two of the deaths were from causes apart from the eclampsia. The cases of nephritis and pernicious vomiting, which are more readily classified, show a mortality of ten and twenty-three per cent. respectively, inasmuch as there were thirty more or less severe cases of nephritis with three deaths and thirteen cases of vomiting with three deaths. In other words, pernicious vomiting and severe nephritis were as fatal to the pregnant woman as was eclampsia, which we have always considered as one of her gravest dangers.

There are valuable lessons to be gained from these fatal cases of toxæmia. Of the deaths classed as due to eclampsia, one was that of a postpartum eclamptic who entered in coma and died practically before any treatment could be instituted; a second was that of a patient who died of cerebral thrombosis long after the symptoms of eclampsia had disappeared. The remaining six were alike in the respect that all were treated more or less symptomatically before they were delivered. *No patient that was delivered immediately after the first convulsion died of eclampsia.*

Of the cases of nephritis one with œdema of the lungs died immediately after delivery, though labour had been induced upon her admission to the hospital. The two others rallied for a time after delivery, then changed for the worse about the eighth day, at a time when the serious danger seemed past.

Of three deaths due to toxæmia with vomiting, one occurred after

abortion at three and a half months, but the other two were of patients who had been carried through pregnancy in spite of the vomiting and who died after the strain of labour.

I think it may be admitted that mortality can be lessened—

1. By the immediate delivery of eclamptics.
2. By the timely interference in all cases of albuminuria with evidence of renal insufficiency.
3. By the realization that vomiting, when persistent, is a grave sign and that a child carried to term in a patient with severe toxæmia lives at the expense of the mother's life.

The frequently toxæmic character of early vomiting should always indicate care in its observation; later the quantity of urine is as important as its physical characteristics. Two counsels for pregnant women are, "drink plenty of water," and "keep the bowels regular." In case of doubt, with even slight symptoms, valuable information of the renal condition may be gained by putting the patient to bed on a fluid diet, which should be carefully measured, then, carefully tabulating the output of urine and fluid stools, a comparison of the two totals will give an index to the gravity of the condition.

In all cases of toxæmia the coagulability of the blood is an important factor, and milk, on account of its high calcium contents, should, I believe, be avoided.

Short of actual delivery, blood letting is the best of all therapeutic measures, but in cases of doubt labour should be promptly induced by some modification of Krause's method.

There is no branch of medicine that is so insufficiently taught or so badly practised as obstetrics; and it is safe to say that in spite of the mortality records I have quoted, eighty per cent. of all women approach their first labour without a preliminary examination, and that the casual and occasional examination of a small quantity of urine is of little value. Are there not too many of us in the class of the practitioner who, on being asked what fee he obtained for a confinement, replied: "An ordinary case five dollars, a little sepsis ten dollars, a little more sepsis fifteen dollars"?

With reference to the disabilities incident to labour, I have noted during the four months, January-May, 1910, the condition of the new patients that have applied for treatment in the gynecological outdoor department of the Montreal General Hospital. During that time there have been some 130 new cases, of whom ninety-six had borne children. Of these, five were without definite physical signs, and eleven came for a diagnosis of early pregnancy, or for some trouble connected with early pregnancy. Of the remaining eighty, sixty showed evidence that a

previous labour had more or less to do with their present condition. That is, there were as underlying causes:

| | |
|---|----|
| Laceration of the cervix with leucorrhœa..... | 15 |
| Prolapse of uterus, long standing | 9 |
| Retroversion with pressure symptoms | 8 |
| Retroversion with prolapse (moderate) | 6 |
| Parametritis | 6 |
| Subinvolution | 5 |
| Obstinate constipation following labour..... | 5 |
| Irregular hæmorrhages | 3 |
| Cystitis | 3 |

Obviously the cause of these disabilities must be sought, (a) in the persistent relaxation of the vaginal outlet, (b) in the non-healing of cervical lacerations, and, (c) in some factor tending to backward displacement of the uterus after labour.

For the laceration of the cervix the explanation is probably easiest. Under ordinary circumstances, if the labour progresses naturally there will not be extensive laceration of the cervix. But it is not the habit of the majority of practitioners to allow labour to progress naturally. The dictum, that "the forceps is only to be applied when the cervix is fully dilated," is unknown to the majority of practitioners who have little or no compunction about dragging a head through a cervix but half dilated. Not only is this the case, but an old idea that the laceration of the cervix should be left unrepaired on account of the danger of infection, still holds its place in the minds of a great number of practitioners, and, possibly, with the technique usually employed, rightly so. Yet, if we are to hope for fewer postpartum complications, we must bear in mind two rules; first, that "the forceps must not be applied till the cervix is fully dilated," and secondly, that an "extensive laceration of the cervix should be repaired even as a laceration of the perinæum."

Laceration of the perinæum is probably more important than laceration of the cervix, since, where treatment is not radical but conservative, the patient may be allowed to go for a long time without the assistance of a forceps in the hope that the labour may progress naturally, for the majority of practising physicians still believe that a laceration of the perinæum is unnatural. Indeed, it is not so long since that we had with us the practitioner who *never* had a laceration of the perinæum in a confinement case; and he may be here still. Such a man either is incapable of appreciating what a laceration of the perinæum means, or it has been his good fortune not to have been called to a patient with

that narrowing of the pelvic outlet which occurs in about one in ten of all patients that come for confinement. It is time to realize that the laceration of the perinæum depends more or less on mechanical factors and not upon the care given to the patient. Indeed, under certain circumstances, it may be advisable to anticipate the possibility of a tear and incise the perinæum before allowing the birth of the head. An incision in a perinæum that obviously must tear with the birth of the head gives a wound easy to repair, which rarely extends far up into the vagina. The principles of the perinæal repair are, to "take a wide bite" on each side of the wound, to "go as deeply as possible into the surrounding tissues," and to "tie the sutures very loosely." The idea is to splint the tissues rather than tie them together. If these three principles are borne in mind the most inexperienced will be surprised at the satisfactory results achieved.

While the laceration of the cervix and the laceration of the perinæum may account for a certain number of the conditions noted above, one further feature in the general management of cases postpartum seems to be accountable for much later distress. This is the custom of tightly bandaging the patient immediately after delivery, and leaving her in such a condition that she is comfortable only when lying flat upon the back. This procedure has, I believe, three distinct disadvantages. In the first place, it absolutely opposes any involution of the round ligaments, which would tend to draw the uterus forward; it prevents the falling forward of the uterus upon the bladder, with the consequent tendency to spontaneous micturition; and, finally, tends permanently to hold the uterus back, so that the anterior lip of the cervix is drawn forcibly from the more or less fixed posterior lip, and laceration, if present, is prevented from healing by the formation of scar tissue in the angle of the wound. Not only does this permanent opening of the cervix cause discomfort later, but it is usually associated with a permanent, backward displacement of the uterus.

Opposed to these three marked disadvantages of the binder, there is, I am sure, no definite advantage to be claimed for its use. True, it has been urged that the figure of the patient has been preserved by its use,—an idea exploded some hundred and fifty years ago by a not unknown Frenchman named Mauriceau,—and the fallacy is obvious to any one who would consider for a moment the value of splinting muscles, say in the arm or the leg, as opposed to allowing them free use. Moreover, the loss of the figure as a result of pregnancy or labour is not dependent upon the handling of the puerperium. While, on the one hand, it is necessary that the cervix should be dilated before the application of forceps, we should remember that trouble post-

partum is frequently a result of too long a delay in the second stage, which so over-taxes the abdominal muscles that the recti are pulled apart, and the patient can never regain her former condition.

The most universally accepted argument in favour of that much discussed question—early rising in the puerperium—was its marked effect in decreasing the number of cases of retro-version; in a series of cases prepared some years ago, I found that retro-version, postpartum, in the bandaged cases was six times as frequent as where the binder had not been used.

Cystitis, though comparatively infrequent, may occur postpartum, and is then due to frequent, and possibly careless, catheterization. I have noted that the bladder is mechanically hindered from emptying itself by the application of the binder. Where a binder is not used the distension of the bladder is made evident in its effect upon the position of the fundus of the uterus, and the quantity of urine in the bladder gauged roughly by the displacement of the fundus—1 cm. corresponding to 100 c.c. Further, if the patient is catheterized immediately after the completion of labour, the chances of voiding spontaneously are greater than if she is left alone, and for this reason: no matter how carefully the perinaeum is guarded small lacerations will occur about the vestibule. These, if left to themselves, heal spontaneously in the course of a few hours; but, if within a short time after the labour the patient voids, and the urine trickles over the abrasions, the consequent irritation is sufficient to cause retention, and should catheterization be necessary the manipulation for this operation prevents the healing of these wounds. If the patient's bladder is emptied immediately after the completion of labour, it is possible to wait twelve, or even fourteen, hours, during which time the patient may sleep comfortably without fear of over-distension; nor do I recall any case where the catheter was required later, when this had been done. Where catheterization is necessary, the value of large doses of urotropin, postpartum, and also the administration of large quantities of water as an inducement to spontaneous micturition, is undoubted.

I would not have you think that I hold the abdominal binder responsible for all the ills resulting from the management of the puerperium, but I do believe that it is a most important factor in its influence on the adverse conditions resulting from the labour, that it serves no good purpose, that where it is not used it is possible to obtain a better idea of the involution of the uterus and of the condition of the bladder, and that its absence allows freedom of movement by the patient with a resultant improvement in the condition of the abdominal muscles. Remember that it is as important to avoid over-stretching of the

abdominal muscles by a too long second stage, as, on the other hand, it is wrong to undertake operation before the cervix is fully dilated; and, finally, while it has ceased to be a disgrace to allow a laceration of the perinæum, now the disgrace is to allow such a laceration to go unrepaired.

Care in the puerperium will avoid many disabilities, and care at the time of the labour will avoid many deaths. Deaths from hæmorrhage and deaths from infection vary with the experience of the practitioner. The frequency of the deaths from toxæmia vary with the attention given to the patient during pregnancy and to the realization of the many obvious danger signs.

TWO CASES OF TYPHOID SPINE

BY JASPER HALPENNY, M.A., M.D., C.M.

*Surgeon to the Winnipeg General Hospital, Lecturer in Clinical Surgery
in Manitoba Medical College*

AND DONALD F. MCINTYRE, M.D.

Senior Resident Surgeon, Winnipeg General Hospital

CASE No. 1. G. A. Shoemaker, age, thirty, admitted to the Winnipeg General Hospital, January 24th, 1910, discharged May 14th, 1910. The family history was negative, with no tuberculosis. The patient's health was always good until last November, when he contracted typhoid fever, for which he entered the Winnipeg General Hospital, November 8th, 1909, and was discharged December 21st, 1909. The disease was diagnosed by the typical temperature, positive Widal reaction, and the presence of roseolas on the abdomen, also by the occurrence of three other cases in his house at the same time. There was no delirium at any time. The highest temperature was 104 degrees, and that on only one occasion. The pulse rate never went above 90. The kidneys, lungs, and bile tract were normal throughout. On December 7th he complained of pain in the region of the right hip. There was no local redness, swelling, or tenderness, and the movements were not markedly interfered with. He went about the ward without much complaint and was easier when he left the hospital on December 21st, though there was still some pain. After leaving he continued going about, but was never able to work. The pain gradually became worse till January 15th, from which time he was confined to bed. Rest always relieved the pain, and exertion made it worse. He reentered the hospital, as stated above, on January 24th, 1910. He now complained of pain and tenderness in the lumbar region of the spine, also pain in the iliac region of the abdomen on both sides.

On admission, the patient was unable to walk on account of pain in the back; his temperature was 100.4 degrees. A physical examination showed that the patient was well nourished. There was a marked swelling over the lower lumbar region of the spine, and the skin over this was red and rough. There was no local tenderness, but any jarring gave great pain in this region. He always complained

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of very severe pain here on movement of the spine, which he held very rigid. The pain radiated down the right thigh and around the iliac region of the abdomen on both sides. Sensation over this region, and also in all contributory areas, appeared to be quite normal. The patellar tendon reflex was diminished; other reflexes were normal. Kernig's sign was present. All other systems were apparently normal. An unsuccessful attempt was made to isolate the typhoid bacillus from the urine.

The prominent feature of the illness was pain. At the time of our first examination, on February 3rd, the patient lay flat on his back with the legs somewhat drawn up. He could move his head and arms without any pain. Extension of the legs gave some discomfort. The slightest movement of the trunk made him complain bitterly. The sitting posture was entirely out of the question. To relieve the pain, veronal and phenacetin had been tried with no effect. Morphine was used up to one-half grain in a night. Its use extended over a period of three weeks, and was discontinued only when a plaster cast had been on for three days. The chart shows that, generally speaking, the pain was worst while the temperature was elevated. During the time of the greatest pain he frequently had headache, nausea, and general malaise. At no time was he hysterical. During the periods of greatest pain, usually at night, a placebo hypodermic had no effect.

As stated above, the temperature was 100.4 degrees on admission, but it dropped to almost normal the following morning, where it remained for six days. On January 31st it rose to 100 degrees, and the following morning shot up to 103.4, but later in the day fell to 100. It ran an irregular course, never more than 100.4 degrees for a week. A plaster jacket was applied on February 11th, and for nine days the temperature continued to be elevated in the evening, on one occasion reaching 103 degrees. After February 20th, it remained normal.

There was no appreciable atrophy of any groups of muscles. This is not in keeping with the findings of Silver¹ and McCrae² who observed muscular atrophy on the side of greatest bony deposit. In our case, clearly the right side showed more bony involvement than the left. There was no spinal infirmity present except a loss of the normal lordosis in the dorso-lumbar region. The swelling described above seemed rather to be an involvement of the soft parts. On February 4th, a leucocyte count showed 12,000 white cells. It is to be regretted that only one count was made. One skiagram (plate No. 1), was taken February 4th, and a second (plate No. 2), on May 25th. Between the fourth and fifth lumbar vertebrae it will be observed that the intervertebral disc is somewhat thickened. The normal

appearance of a space laterally between these two vertebræ has disappeared. On the right, one sees distinctly a considerable deposit of bone extending from the spine to the crest of the ilium. An examination of the original plates in a good illuminator shows, what is not clearly seen in the accompanying figures, that a denser bone formation existed at the time of the second exposure than was present on the first occasion.

It will be observed that the onset was insidious and slow, and hence treatment was not instituted early. The patient soon learned that rest relieved the pain, and, as noted above, remained in bed nine days before reëntering the hospital. From the time of his admission he was kept in bed with a fracture board under the mattress. On February 11th, a plaster jacket was applied, and in seven days hypnotics were discontinued, while in nine days the temperature dropped to normal, where it remained. On May 4th, the plaster jacket was removed, and a spinal brace applied. There was no pain at this time, except on flexion of the spine. He was not allowed out of bed. When discharged on May 14th, he felt very comfortable in the brace.

The patient was seen on July 10th. Up till that time he had not been able to go without the support; if he attempted to do so pain would return immediately over the right side of the fourth lumbar, intervertebral space. On this date he went out to the country. In view of the undoubted attack of typhoid fever preceding this illness, and in view of the symptoms and x-ray finding, and the absence of evidence of tubercular involvement, we regard this as a case of typhoid spine. The rise in temperature, and the leucocyte count, in conjunction with the evidence from the skiagram, undoubtedly remove it from the class of neuroses. We cannot regard it as tubercular, both because of the symptoms during the acute stage, and its later course. The diagnosis of typhoid spine seems to us the reasonable one. We expect the man to be perfectly well in six months.

Case No. 2. Conrad Bartleson, age, thirty, a stone mason by occupation. Patient gave a history of having no illness until August, 1909, when he had what was diagnosed by his physician as typhoid fever. This appeared to have been a fairly severe attack lasting ten weeks, without complications, however, except for the pain referred to below. The patient says that during his illness he had considerable headache and diarrhoea, with some pain in the abdomen. Unfortunately, we have no record of a Widal or Ehrlich's diazo reaction. During convalescence he had pain, which he states was in the region of the right hip. This began during the latter part of his illness, no history of injury being obtainable, and continued, though not severely, until

five weeks after he was allowed out of bed, when he had to go to bed again. At this time the pain was more in the region of the lower spine, though the hip was still sore. The patient stated that all the pain was on the right side. He remained nine weeks in bed for this condition before entering the Winnipeg General Hospital. On admission to this hospital, the general appearance of the patient was good, and the pulse and temperature were normal. On examination, nothing abnormal was found except in the spine, where there was marked tenderness over the lumbar region, especially on movement, the pain being located chiefly on the right side. There was no swelling. There seemed to be some wasting of the lumbar muscles on this side. Jarring on the head or feet caused great pain. The radiograph, plate No. 3, showed considerable increased density of the fourth lumbar intervertebral disc. Treatment consisted, first, in cauterizing the back, and later, the application of a plaster jacket. The patient was making a good recovery when he left the hospital, after twenty-six days' treatment. This, to our mind, seems to prove at least that the case was not one of tuberculosis. In addition to this, the patient had a tuberculin test, which was negative.

Since a former article by one of us,³ four cases have been reported. These were all in males, aged, respectively, fifteen, sixteen, nineteen, and twenty-eight years. All had, as the outstanding symptom, pain located in the dorso-lumbar region. One case,⁵ showed a distinct lumbar kyphos and also a later listing; one,⁶ showed a prominence over the last two dorsal, and first lumbar vertebrae; and one,⁷ showed no deformity. In three cases, (8), (5), and (6), definite bony changes were revealed by x-ray photographs. In case (8) there was "much thickening of the intervertebral discs with signs of necrosis in the vertebrae and many osteophytes around them." In case (5) "an x-ray picture showed a disappearance of the disc between the fourth and fifth lumbar vertebrae, with evidences of new bone formation and scoliosis beginning at this point."

In case (6) there was observable a very dense shadow over the bodies of the ninth, tenth, and eleventh dorsal vertebrae, extending laterally beyond their limits, and expanding from above downwards to a point an inch outside the articular process on the right side, and rather less on the left. A second skiagram, taken three weeks later, showed the shadow to be less dense. Thus it is seen that, since attention has been drawn to the bony changes, the x-ray is giving positive findings in more cases.

The exact diagnosis in this class of cases is still a debated question, in some instances rightly so. The absence of distinct evidence of necrosis in reported cases leaves room for doubt as to there being a

distinct spondylitis. In a personal communication, Professor Osler says: "I cannot at all agree that in all cases spondylitis is present. The abrupt recovery and the whole group of symptoms in certain instances is very much against this view. Then, again, the great majority of all cases of post-typhoid bone lesions come to suppuration, while this is very rare in typhoid spine." We appreciate the force of this argument. However, in the presence of pain, a rise in temperature and pulse, a leucocytosis, and a bone lesion demonstrated by x-ray, it will, we think, be admitted by all that, in these cases at least, there is a definite spondylitis. So far as we are aware no case of undoubted necrosis has occurred, except Fichtner's⁴. Necrosis in other bones, particularly the ribs, is quite frequent, and is, perhaps, the usual outcome of infection from the typhoid bacillus in these bones. Its rarity in the spine is hard to explain, yet we know that a fair number, at least, have shown by skiagram that a definite bony lesion was present. Since these undoubted cases of bone involvement do not go on to necrosis, it would seem a reasonable conclusion that less severe cases were not necessarily pure neuroses, merely because they showed no signs of caries.

With regard to treatment, as has been pointed out by one of us,³ an early diagnosis followed by rest, postural or mechanical, or both, goes a long way towards cutting short the period of convalescence.

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ORIGIN OF URINARY STONE

By G. S. GORDON, M.D.

Vancouver, B.C.

THE results set forth in this paper are based, in part, on rough chemical analyses of about one hundred calculi, thirty or forty per cent. of which have almost complete clinical and surgical histories. If the causation of stone be considered, it will be found that certain views have resulted from the consideration of diet by students of the stone districts in England, France, Russia, Holland, Iceland, Egypt, and India. In England, where uratic stone may predominate, it has been attributed, it would seem erroneously, to the eating of meats. In India, the legumen-eater only has stone; the rice-eater is exempt. These stones, such as I have analyzed, are primarily urates, which later have become infiltrated with oxalates and triple phosphates. A. E. Roberts, consequently, considers an excess of potash with a corresponding deficiency of soda in the food to be the cause of stone. In Holland, the prevalence of stone has been attributed to the hard water supply. In Egypt, the bilharzia hæmatobia from drinking water lodges in the bladder epithelium, and under certain conditions, forms, the nucleus of calculus, and in France, where the stones are said to be mostly oxalates, a diet rich in sorrel is reputed to be the cause.

The earlier writers had small store of physiology, and had to content themselves largely with the clinical side. Many conflicting hypotheses were advanced, based, for the most part, on the local conditions of the stone districts. The coincidence of certain forms of diet, of certain callings in life, of age, sex, heredity, water supply, climate, disease, etc., with the formation of stone, were looked on as cause and effect, and the result was that each country had its champions for certain supposed ætiological factors, which were disproved by most of the others on the ground that no such conditions held in their districts. With Bence Jones came a fuller physiology; with Roberts, a fuller application. The latter's ingenious theory was that a lack of colouring matters, acid reaction, and an abundance of uric acid were causative of urate stone.

Apart from particular theories, it has been found that certain modes of life, more especially those which entail lack of physical exercise, are conducive to stone. Age plays a part. The children of the poor, the affluent of middle life, and old people of all classes are

especially subject to stone. Sex is almost a negligible factor. Boys are more subject to sizeable vesical calculi than girls, because the former cannot void them when small as easily as girls. The frequency of renal calculus is about the same. Hereditary predisposition to stone must also be accepted. Climate seems to play no part, for stone is found in the natives of all climates. There is a coincidence of urate stone and gout in England, of neurasthenia and oxalate stone in France, but whether they bear the relations of cause and effect is not so clear. Of local diseases, we know that an uninfected foreign body in an aseptic part of the urinary tract will not form the nucleus of stone; but we also know that urealytic infection superadded produces triple phosphate stone. Spinal injuries may also result in triple phosphate stone formation because of the cutting off of the nervous control of infection, thus allowing pathological microorganisms to make headway in otherwise unassailable places. Trauma of the urinary organs and resultant hæmaturia may also lead to oxalate formation.

Let us first consider the elements of calculi found in normal urine: uric acid, calcium oxalate, calcium and magnesium phosphates, ammonium magnesium phosphate, and colouring matters. Uric acid, mainly the end product of intracellular katabolism of nucleins, and excreted into the circulation as such, in passing through the liver, is transformed, almost wholly, into soluble urea to be thrown out by the kidneys. Large amounts of uric acid given hypodermically have, consequently, never resulted in stone. A certain amount is always found in urine, but, usually, when stone forms, uric acid is not present in excess. What has been said of uric acid largely holds good of xanthin. It is uric acid only one degree less oxidized. Oxalic acid is found in normal urine, usually in a soluble form. It is as the calcium salt that it precipitates as envelope-shaped crystals in what is commonly known as oxaluria. This does not necessarily imply an excess of oxalic acid, for usually an abundance of calcium is free to combine with the oxalic acid in the urine. Oxaluria, therefore, is associated with calcaruria. Oxalic acid itself may be derived from oxalate-bearing food, such as rhubarb and sorrel; from the katabolism of gelatin-bearing tissues, such as cartilage; and, lastly, perhaps, from the breaking down of uric acid infarcts in the kidneys in lithiasis, so called, to urea in which oxalic acid may be a by-product.

The acid phosphates of calcium and magnesium are very soluble and are mainly responsible for the acid reaction of the urine. Those phosphates which contain more calcium and magnesium are less soluble and form precipitates in what is known as calcaruria, or, more correctly, alkalinuria. Whether phosphates are precipitated or not is consequently

only a question of the relative amounts of phosphoric acid and of calcium and magnesium eliminated into the urine.

The sources of calcium are: first, ingesta, especially alkali water, lime water, and Epsom salts; and, second, the breaking down of calcium- and magnesium-bearing tissues, such as bone. This is especially marked in some forms of neurasthenia, and in old age, when lime infarcts form in the kidneys. Calcium may be eliminated in greater amount in the urine when catarrh of the big gut handicaps its calcium excretion function. In hyperacidity of the stomach more lime is absorbed and eliminated in the urine than in health. Cystin, or its isomeric, is found in normal urine. Its origin is obscure. Carbonates and triple phosphates I have always found, associated with infection, capable of breaking up urea into carbonic acid and ammonia. Traces may be found in normal urine, but stone does not form without this pathological supply, and not then, unless the urinary tract is invaded as well as the urine.

The colouring matters of the urine are colloids, whose function is to attach to themselves the particles of uratic, or other, crystalloids in the urine when it becomes super-saturated, and hold them in suspension for expulsion in the urine, or for solution again, should the urine become more dilute. Urate stone probably owes its colour to them, all the urinary salts of uric acid being colourless.

These constituents of stone, I take it, are not the important ones. They are found in normal urine, and stone is a pathological product. Stone forms irrespective of the abundance, or partial deficiency, of these. This supply is practically always present, but is voided in solution or as precipitates. What is it then, that agglutinates these salts into stone? That is the substance or substances of which it is important to know all we can. Once have the cement for these salts to bind them together before they can be voided, and we have potential stone; continue this supply, but vary it or the salts in amount, in the meantime having the gravel detained, and stone forms in layers. These layers vary in density, if of the same materials. They may also vary in materials, so that it is very common to see an oxalate surround an urate, or vice versa, while triple phosphate, following infection, forms an outer coating to most stones. These cements are probably all colloids, but not the colloids of normal urine. The latter absorb particles and release them. The colloids of stone absorb particles, but do not release them. These glues stick together the urates, oxalates, etc., and then become converted into an insoluble matrix.

The best known of these so-called irreversible colloids are, perhaps, mucinogen and fibrinogen, which, on standing, are transformed into

mucin and fibrin, and then become incapable of reverting to their original form. Stone crystals imbedded in these jelly-like materials, as time goes on, ultimately find themselves in a stringy net-work, which not only keeps them enmeshed, but also renders them urine proof.

It seems probable that there are several cement materials which have special affinities amongst the normal salts of urine to the exclusion of other salts. The administration of uric acid, in any amount, will not cause urate stone to form; but administration of adenin, to dogs, does produce it. Adenin is not found normally in the blood; but it occurs intra-cellularly in the processes of katabolism. Oxidized it becomes uric acid. Now if a cell is deficient in power to oxidize its waste to uric acid, it may expel this adenin into the blood, and so stone may result, as in administration of this substance experimentally. This toxin sets up nephritis, and it is this nephritis which we look on as specific to produce an inflammatory exudate containing a cement which will bind uric acid into gravel and ultimately into stone. We are dealing with a specific, chronic, leucomain poisoning.

Schade made mixed oxalate and phosphate stone by beating up these salts in ox's blood. Israel has found iron in oxalate stone, presumably from its blood content, for whatever the external colour of oxalates, on section they are the shade of stale blood. It seems not improbable that all oxalates have blood for a matrix. It may be freed, by trauma, by external violence, by a stone already formed, or by the passage of oxalate crystals themselves through the renal tubules. It is probably fibrinogen and allied substances in free blood which is the cement, as whipped blood gives no such result with oxalate salts. The frequency of oxalate stone in old age may be due to the hæmaturia of sclerosed kidneys, most commonly found at this period of life.

Fibrinogen from free blood is probably the sole origin of fibrin calculi. The blood clot is held back, undergoes fibrinous changes before it can become infiltrated with crystals, and becomes a leached out mass of almost horn-like consistency.

The matrix of triple phosphate stone is formed by the action of pathological microorganisms which have also the power of splitting up urea into carbonic acid and ammonia. The slime associated in the minds of us all with ammoniacal urine, which is an inflammatory product, perhaps containing mucinogen, is the cement substance in question. The matrix of calcium carbonate stone and of calcium and magnesium phosphate seems to be that of any other stone in which the reaction of the urine will allow it to precipitate. These salts almost always adulterate triple phosphate and calcium oxalate stone; but I

have never seen a pure calcium carbonate or calcium phosphate urinary calculus, and doubt its existence. The matrix of cystin stone I cannot even guess at, unless it is the product of a toxin somewhat similar in action to adenin.

The practical application of these hypotheses lies in prophylaxis. Katabolism, associated with urate stone for the most part, seems deficient in oxidation power. We may be able to force fuller combustion within the cell itself of its nuclein waste by using a forced draft,—physical exercise,—to draw in more oxygen through the lungs; and, secondly, by the administration of metals capable of carrying oxygen in many combinations, such as iron, arsenic, manganese, and, last but not least, mercury in small doses. Most of us know the power of Donovan's solution to relieve headaches, in what is commonly known as lithæmia, which is probably an auto-intoxication with leucomaines, of which adenin is one. And lastly, alcohol, because of its deoxidizing effect on blood, should be prohibited to people with uratic dyscrasia. For nephritis, once established, the usual measures to prevent overload-ing the kidneys, such as diet, baths, etc., should be adopted.

To prevent oxalate stone from forming in cases of wound of the urinary tract, abstention from food containing much calcium or oxalic acid is necessary. Remove urate stone before it causes hæmaturia by wounding its bed. In oxaluria, combined with phosphaturia, in neurasthenic states, administer phosphoric acid. For triple phosphate stone, avoid urealytic infection by curing, when present, gonorrhœa; by removing any obstruction to urination; by removing foreign bodies in the urinary tract, whether introduced from without, or of pathological production, such as urate, or other stone; secondly, when such infection is present, control it as much as possible with urotropin; and lastly, and what is of very considerable importance, when urealytic infection is present, do not administer lime or magnesia, or alkali water, for they may so increase the supply of crystalloid material in the urine, that masses of agglutinated, triple phosphates, which would otherwise be voided, will grow so rapidly as to attain operable size. To prevent formation of all kinds of stone, abundance of good water is to be recommended. Biochemistry, presumably, is better carried on in dilute media, and stone materials in the urine are more apt to be voided before stone can form.

Case-Reports

SARCOMA OF THE LUNG

BY EUGENE SAINT JACQUES

Adjunct-Professor of Clinical Surgery, Hotel Dieu, Montreal

AS sarcoma of the lungs is not very often met with, it might be of interest to recall its clinical aspects, and to note the pathological conditions in three cases,—one primary, two secondary,—which came under my observation. Let me first report the clinical history of these two secondary cases:

Case 1. Ernest R., age, 66, came to the Hôtel Dieu for a tumour of the left thigh, which was diagnosed as sarcoma of the soft parts. Notwithstanding two operations, there was local recurrence, and the patient became gradually more anæmic and thinner as dyspnœa increased. There was also well-marked arterio-sclerosis and angina pectoris. An examination of the lungs revealed emphysema on the right side, and on the left, dulness on percussion. There were no vesicular sounds or vocal fremitus. A thoracentesis gave negative results.

At the autopsy, a fungous and ulcerated mass was discovered on the antero-superior part of the left thigh. The inguinal glands were hypertrophied. Of the lungs, the right was congested at the base, and the left had disappeared, its place being occupied by a solid, whitish and lardaceous mass, which filled up the whole of the left side. There were pleural adhesions at the apex. On the mass, and corresponding to a point marked by the intersection of the anterior axillary line and the third rib, there was a nodule the size of a hazel nut. Adhesions were also found between the mass and the pericardium. On opening the latter, some fifty c.c. of a clear liquid escaped. There was also an adhesive pericarditis at a point corresponding to the above pleuro-pericardial adhesions, and dilation and hypertrophy of the heart.

A microscopic examination showed a mass of cells, with no definite disposition or tendency to orientation. Here round, there spindle-like, the cells varied in size, as did also their nuclei. Signs of active mitosis were present. Embryonic vascular formations, typical of sarcomatous tissues, tunnelled, as it were, through the mass, without the usual endothelial lining. In the pleural nodule, the cells seemed to have a somewhat different orientation. Of varying size, here densely packed,

there more loosely disseminated, they were scattered in all directions, and in between them were small, round cells, similar to the lymphatic gland cells. There was also a sarcomatous cell infiltration, rather spindle-shaped, into the superficial muscular layer of the heart.

Case 2. Alfred D., age, twenty-five, came to the Hôtel Dieu Hospital in November, 1900, seeking relief from dyspnoea and general weakness. His respirations were forty per minute. The left side of the thorax was swollen, and there was complete dullness up to the clavicle with no respiratory sound or vocal fremitus. His previous history showed that he had been in good health until fifteen months before, when, owing to a traumatism of the left leg, his knee began to swell. At the beginning of 1901, Dr. Ahern, of Quebec, performed a disarticulation of the thigh at the hip joint for sarcoma of the knee. By thoracentesis 200 c.c. of fluid were removed, and, on a second aspiration, 500 c.c. more. There was no change in the area of dullness. A year after disarticulation of the leg, death in great distress followed from dyspnoea.

In the autopsy, the tissues in the neighbourhood of the hip cicatrix showed no signs of recurring sarcoma. The right lung was emphysematous in the upper part, and congested at the base. In the left lung, again there was no lung tissue remaining. The left thoracic cavity was filled up by a soft mass of semi-clotted blood, in which the fingers found only shreds of tissues. The vessels of the hilus were scarcely a few centimetres long, and ended abruptly, as if torn or eaten away. Sarcomatous cells of the round, or oval, variety, and of all dimensions, were present, and there was active mitosis, and intense malignancy. In some very few places there was a nuclear disposition, recalling the giant cell, which corresponds to the so-called "angio-plastic" sarcoma of the French authors.

The third case was one of primary sarcoma:

Case 3. Mrs. Arthur P., age, twenty-eight, was brought to the Hôtel Dieu Hospital, on February 19th, 1910, complaining of intense dyspnoea, pain in the left side, and palpitation of the heart. Her previous history showed that she had been married for eight years and had had one abortion, followed by five normal pregnancies. Her last child was born in September of the preceding year, when her convalescence had been normal. On December of the same year, acute symptoms of pleurisy developed on the left side. The patient became gradually weaker, and finally, six weeks later, took definitely to bed on account of the swelling of the left leg.

When this patient was brought to the hospital, she was in great distress from shortness of breath. The heart beats in the fifth intercostal space of the right side of the sternum were 120 per minute. There was a tympanitic sound on percussion of the right side, and a

dulness on the left side. There was no respiratory sounds or vocal fremitus. Her temperature was 98-99 degrees. A thoracentesis gave a bloody liquid. A thoracotomy was done in order to relieve the heart, but notwithstanding the evacuation of clotted blood and débris from the pleural cavity, no relief ensued. Death followed within a few days, the patient suffering great agony, caused by an intense dyspnoea.

In the autopsy, no superficial glands were to be felt. The right lung was compressed by a displaced heart, and was slightly oedematous. The left lung showed no traces of this but the left thoracic cavity was filled with a mass of clotted blood in which remnants of lung débris were found. The pericardium showed signs of inflammation where it was in contact with the mass of the left side. It contained about forty c.c. of a clear liquid. The ovaries were fibro-cystic. In the fallopian tubes the hydatid of Morgagni was attached to the fimbriated extremity of the right one. The left was normal. A microscopical examination showed that the pulp-like substance occupying the whole of the left side of the thorax was composed of small, round cells and red blood corpuscles. The typical vascular tunnels usually found in sarcomatous tissues were present.

If we were to draw conclusions from the findings in these cases, as well as from the reports of other cases published in medical literature, we should thus tabulate our final remarks: Sarcoma of the lung develops insidiously, giving rise to the following pathological symptoms only when a rather large area of the lung is involved: a bulging of the thorax; dulness on percussion, reaching in certain cases as high up as the clavicle; a gradual diminution of the respiratory sounds and of vocal fremitus; pleuritic effusion, either clear or, more generally, hæmorrhagic; displacement of the heart to the right, if the sarcoma has developed in the left lung; increasing anæmia; irregular pyrexia; death through anæmia and toxæmia, and in great distress.

If we consider the pathological aspect, we find that sarcoma of the lung is usually secondary, the primary variety being very seldom met with; that it can develop at any age; that, when secondary, it usually develops in the left lung, and either develops into a solid mass, gradually invading the organ, and substituting its elements for those of the normal tissues, or else, through the proliferation of its newly-formed cells, brings about the formation of a soft, pulp-like mass formed of semi-clotted blood, in which are found shreds of sarcomatous tissues and lung débris. When primary, it is usually of the small, round-cell type, but when secondary, it is generally of the mixed variety, large, round, or spindle, cell. In exceptional cases there are found large multinuclear cells, having a certain similarity to the "myeloid" giant cell of the osteosarcoma, the so-called angio-plastic variety.

Editorial

CANADIAN MEDICINE

AS different countries have their individual peculiarities of situation, so their inhabitants develop distinctive types of form and constitution, of character and activity, as they adapt themselves to their environment. The type of disease, too, and the methods of treating it vary more or less in these different countries, so that, in course of time, it has come to pass that, by a process of evolution, there have arisen schools of medicine with distinctive peculiarities. In the New World, a new type is in the process of formation, and we are beginning to hear of American medicine and American surgery, as distinguished from the medicine and surgery of Europe. It is time now to realize that Canada, too, is growing rapidly, and that it is differing more and more from the United States of America and from the European peoples from which it has sprung. A Canadian type of nationality and a Canadian type of disease are in process of formation, and Canadian physicians are quietly and surely laying the foundations for a Canadian medicine of the future. The Canadian Medical Association and its Journal, by enlisting the sympathy, support, and coöperation of men from all parts of the Dominion, will help to lay those foundations broad and deep, and will do much to banish sectionalism and provincialism.

But, if this great end is to be attained, all must work together loyally and earnestly. The teachers in the various medical schools, east and west, must become sensible of the great possibilities which lie before them, must get in touch with all sections of the country, must realize and anticipate their needs, and must do their utmost to educate men not only imbued with the scientific spirit but also well equipped for the

extremely practical work which is before them. Moreover, they should acquire a feeling of just pride in what has been done for medicine in Canada, and a confidence in the intelligence and ability of their own representative men. In medical societies and conventions, when men are reporting the results of good and careful work, it is common to find them hastening to explain that their views and results are quite in accord with those of some German, French, or American authority. They apply the plumb-line and square of European medicine to their own work. But why should we not have a plumb-line and a square of our own, and abandon the stamp "made in Germany" as the mark of excellence in education and practice? It is quite possible to build up a Canadian medicine, but to do that confidence is necessary. The clinical teachers in the medical schools might do much more than they are doing. If they were to remember always that they are training men who are to practise their profession mostly in town, village, and country, away from the well equipped laboratories of hospital and college, they might devote more attention to training their students to make their diagnosis by the simpler and well-known clinical methods, and not to rely so much upon the laboratory diagnosis.

At a recent meeting of the medical society in Montreal there was a series of demonstrations on the uses of the skiagraph in medicine and surgery. In the discussion which followed, Dr. W. F. Hamilton, teacher of clinical medicine, assured his hearers that, for him, the skiagraph gave confirmatory evidence only, that he did not rely upon it for a diagnosis, and that it had never shown him anything yet which he could not have made out by the careful use of the ordinary methods of physical diagnosis. Dr. Elder, a surgical teacher, deplored the growing tendency in the large hospitals to depend upon the skiagraph for the diagnosis of fractures, to the exclusion of the ordinary surgical methods. Diagnosis by skiagraph is so easy and simple, and such a saver of time! But what will be the plight of the

student who has been taught to rely upon the skiagraph for his diagnosis, when he comes to deal with an accident in the woods, on the railway, in a mining camp, where no such help is available? In order that a teacher may make his clinical instruction of practical value to his students and helpful in after life in all the conditions where knowledge and skill may be put to the test, he should come into close contact with the general profession, find out its needs, and devise methods of treatment which will be simple and effectual.

By well considered schemes of collective investigation, Canadian physicians could soon gather much valuable information respecting the phases of disease to be found in the widely different classes of this community, and in time improve our methods of prevention and cure. But that means organization on the part of the leaders of the profession, and honest, intelligent work on the part of the general profession. By carefully observing and recording his cases, their origin, course, and treatment; by viewing them in the light in which they are seen; by having regard to their distribution, and the peculiarities of climate and people, each member of the association and each contributor to its journal may do much towards building up a real Canadian medicine.

THE ONTARIO MEDICAL COUNCIL

THE Ontario Medical Council is at present under a cloud; and all thoughtful observers are agreed that the time has come for a complete change in methods, and a careful scrutiny of the objects for which the council exists. When the council was instituted, provincial medical standards were low. Proprietary schools were to the fore, the universities were, in the true sense, without medical faculties, and the new arrangement came as a solution of a great difficulty. Yet it was full of danger, as "homœopaths" and "eclectics" had

to be recognized; and they secured representation out of proportion to their rights, even then, but extremely so at the present time. The council obtained absolute control of the situation, even such an institution as the University of Toronto giving up its claim to grant degrees carrying the right to practise. Wise men of the early days foresaw the inevitable, and a well-known president of the Canadian Medical Association, as far back as 1878, spoke pessimistically of the situation.

Possibly the situation was not quite so humiliating as it was believed to be; but, even in those days, it was frankly admitted that many members of the medical council could be classified as "politicians" by whom personal advancement was more thought of than the interests of the public, or of the profession itself. The council was always interested in medical education, and, while proprietary schools existed, went to great trouble to uphold its standards, which were, on the whole, fairly good, although by no means so heaven-inspired as they insisted. The schools were regarded with suspicion, sometimes with hostility, and elaborate precautions were taken to extract the stings from the professors' tails, as shown by the unique arrangement of examiners. If Professor A taught chemistry he might easily qualify as examiner in surgical anatomy, but could not examine in his own subject; homœopaths were called on to examine in "regular" subjects. As time went on the council more and more lost sight of its true mission, that of protecting the general public, and became impressed with the idea that almost its sole function was that of directing medical education, and holding examinations, which enabled them to collect large amounts in fees from the students. How these fees have been utilized is a matter of too recent discussion to be mentioned here, beyond saying that the disclosures of the last few months have left the council in many ways discredited.

Whatever good it accomplished, and unquestionably it filled a place in medical history, its usefulness, as at present constituted, is gone, and it must undergo a complete reorganiza-

tion. Times have changed, and when medical schools became parts of great universities, as in the case of Toronto and Queen's, the medical council, if it had been well advised, would have assumed a conciliatory attitude towards institutions which could have but one object in view, that of raising standards and placing medical education on the highest level possible. Instead of doing this it went on its way, fondly believing that the universities were still to be suspected, and taking a position of superiority that would not allow them to consult with those who alone were competent to decide what are really the great requirements of a first-class medical education.

In other words, the curriculum of a university must be very largely what the council dictates, rather than what a medical faculty, trained in educational methods, may decide. The university examinations are of no use to the applicant for a license, who must meet the demands of the council examiners at the most inconvenient times. The council has always claimed that its examinations are a really practical test of a student's knowledge, and yet such universities as McGill, Toronto, and Queen's insist that many of their best students fail, while notoriously weak ones pass. It could not be otherwise under the system of examination followed.

The cleavage between the university and the council has at last become clearly defined, and after years of patient suffering, the University of Toronto, a provincial institution, has turned; and, if rumour be correct, will endeavour to regain its right to license, and incidently have the same right conferred on the other universities, if they keep up to the proper standard. No doubt this action was provoked by the action of the medical council in attempting to deprive Victoria, Trinity, and other obsolete medical faculties, of representation. The council was well within its powers in attacking this representation, as there is no reason for its existence, but the council neglected even to comment on a more glaring wrong, that is, the "homœopathic" representation. Such universities as Toronto,

Queen's, and the Western have one representative each, and the "homœopaths" of the province, whose numbers are said to be less than fifty, have five. Surely the "homœopaths" could not object to a dose of their own medicine. At all events, the council should be reorganized, its numbers reduced by cutting off four "homœopaths" and the representatives of Trinity, Victoria, and the Royal College of Kingston. Indeed, it would be wise to reduce largely the number of representatives of the profession at large.

The function of this council should be to protect the general public, to advance the true interests of the profession, and to see that proper standards are being maintained by the different universities. This might easily be done by appointing assessors of high character.

If a new order of things is evolved, we hope that out of the present confusion and dissatisfaction will develop a better state of affairs than at present exists. If the provincial government is wisely advised, it will allow its own university to fix the medical standard, and depute the medical council to see that the other institutions live up to it.

MEDICAL EDUCATION

THE subject of medical education is admittedly a difficult one. Particularly is this true of that part which is concerned with the importance of the "preliminary" studies, and the time that should be devoted to them. Two interesting papers,—*"Report of the Committee on Medical Education of the Canadian Medical Association,"* and *"The Five Year Course,"* the former presented by the chairman of the committee, Dr. Reeve, and the latter written by Dr. J. W. Scane, assistant professor of pharmacology, McGill University,—have recently been issued. Both consider chiefly this aspect of the subject. The report of the committee is not so

much a recommendation of any one plan as an impartial discussion and criticism of the question. It emphasizes, however, the "keener apprehension, deeper insight, and mental discipline" that result from a thorough training in preliminary, especially preliminary scientific, subjects.

Dr. Scane, on the contrary, thinks that there is too great a tendency to prolong preliminary work. In his discussion of the question, Shall the added year be devoted to the primary branches, including the preliminary scientific subjects, or to increased clinical work in the hospital? he says: "Many of the schools of the United States seem to have solved the problem to their own satisfaction by demanding a high standard of preliminary education, and by requiring the student to devote a year or more to the subjects of biology, chemistry, and physics before entering upon the medical course proper. Some of their schools go even further and require the full academic course of four years. No one doubts the value of a broad general education as a preparation for the study of medicine. But looking at the question from the standpoint of time, is it not possible to overdo it, and make the student spend too many of the most valuable years of his life within the four walls of a college? If he begins his studies at the age of six, devotes twelve years to preliminary work, four years to the academic, and four years to the medical course, to say nothing of a possible year in a hospital, he begins his life's work at the age of twenty-six or twenty-seven—too late, in my opinion, for the best results. Perhaps the fault lies in the preliminary work and the lack of correlation between it and the work of the medical course, but the fact remains that we are apt to lay too much stress on preparatory work, and in planning our elaborate schemes of educational reform, to forget that at least a fair proportion of the student's best mental years *should* be spent in acquiring a knowledge of the science which is to form the basis of his life's work. One or, at most, two years in the academic course should be sufficient, and most of that time should be spent in the study of science subjects."

Dr. Scane accordingly dwells upon the necessity of so arranging courses in the five year medical schools as to emphasize, in the teaching of the preliminary science subjects, their bearing on the basic subjects of anatomy and physiology. Such a restriction, he concludes, is necessary, for "if the student is to graduate in medicine, at the age of twenty-four, or at the latest twenty-five, we have only five or, at most, six years to fit him for his life's work, and it does not seem reasonable to devote more than one year or, at most, two to preliminaries."

MEDICAL INSPECTION OF SCHOOLS

THE claim made by Dr. M. Gottfrid Törnell, at the second international congress on school hygiene, that Sweden was the pioneer country in respect to medical inspection of public schools, is well founded. The earliest mention of such officers in that country was some time prior to 1840. Their inspection, as carried out at present, includes the examination of the child to find the state of its health; the adoption of preventive measures against the spread of infectious diseases; the superintendence of school premises as regards their sanitary conditions; the provision against scholars being over burdened with lessons; and the medical care, free of charge, of indigent children.

In Canada, it would seem that the first province to pass a bill requiring such examination was British Columbia. This Act states that "The school trustees of every city and of every rural municipality school district in the province of British Columbia shall appoint one or more school health inspectors." The cities of Montreal and Winnipeg were the first to undertake such work, however.

This work is quite in keeping with the very rapid rise of preventive medicine with its many and varied phases.

The need for medical inspection and the good results accomplished can be amply demonstrated from the statistics of scores of cities throughout Europe and America.

The introduction of this important undertaking requires a great deal of work to educate the public, as well as trustee boards, to seeing its advantages. The medical profession itself is not always unanimous in its support, possibly for the reason that some are afraid of losing a few patients.

As to the method of carrying out the work, there are two rather different plans, as seen in the United States and Great Britain. In the former the work is done as a branch of the local health board. In the latter, as well as in Canada, it is done by officers appointed by and responsible to the local school board, subject, however, to the department of education. The latter plan would seem to be the better one, probably for the reason that civic politics invariably interfere more with really efficient work done under its guidance than does the school board of the same city. Under the local health board the appointments are usually full-time positions, while under the school board they are not always such.

There are reasons which may be advanced in favour of full-time appointments, but they apply only to the larger cities. In smaller centres the remuneration which could be offered for full-time positions would not be sufficient to attract really capable men. Moreover, since treatment is not undertaken, this work would not give a wide enough scope if the inspector were prohibited from undertaking private practice. So far as one can judge from viewing the work at close range in several cities having the system in operation for some years, the best work, on the whole, is done by part-time inspectors who are allowed to engage in private practice as well. However, this point cannot be considered to be settled yet, and full-time appointments may eventually prove to be the better.

In Winnipeg, where this work was undertaken with

more or less fear and trembling, the results have been highly satisfactory in every way. The members of the school board, the superintendent of the schools, the teachers, and the medical inspectors, all speak very highly of its many, and great benefits. The medical profession find their work really increased, by reason of cases being sent to them because of some defect found by the inspector. This is a department in medicine which has come to stay, and Canada should soon have a law on the statute-books of each province similar to that quoted from the statutes of British Columbia.

REPORTING CASES OF TUBERCULOSIS

THE Medical Officer of Health of Toronto has issued notice to the profession that, in future, an old, dormant by-law, requiring that cases of tuberculosis be reported, shall now be put into force. As to the wisdom of such a course, there cannot be any doubt. It is in the interests of the community at large. It is only by having the fullest knowledge of all the cases of tuberculosis, as to their occupation, manner of living, environment, etc., that efficient steps can be taken to prevent the spread of the disease to others, and to aid those who are already affected.

The Health Department should be in possession of information as to the sanitary conditions of the houses occupied by tuberculosis patients, through the physicians, where they are in attendance; if not, through an officer sent to inspect the premises. Simple, private directions should be given to the latter class as to the steps to be taken to prevent spread of infection, and as to the care to be taken of the infected person, whether he or she is able to work, or is invalided. Further, when the room or house occupied by such persons becomes vacant, the Health Department should be charged with the duty of its prompt and thorough dis-

infection. Through such a well-informed Health Department the charitable workers could be so directed that their efforts would be fairly evenly distributed among all the needy.

There are many other important objects which would be served by the knowledge obtained, such as, the sections of the city chiefly affected, and, therefore, the relation of soil and sanitation, and of occupation and nationality, to the incidence of the disease. In a short time, sufficient facts would be available to show the effect to be expected from the education of the public in sanitation, the better chance of recovery for the early cases who are placed in more favourable surroundings, and the diminution in the number of infected.

In carrying out such a scheme, good judgement will be necessary, so as to secure the coöperation of the public, especially of the poorer people, and they form the class chiefly concerned. The reporting should be private, so that no harm be done to the interests of those in the early stages, who, for various reasons, are still under the necessity of working. The object of reporting cases is not to curtail their liberties but to improve their conditions of living, to afford aid where possible, and thus to increase the usefulness of those affected, and improve their chances of restoration to health.

There is much less need for the reporting of cases occurring among the well-to-do, because they are able to provide for all their own needs. Most of them will object to their cases being reported. It will, therefore, be useless to ask their physicians to comply with the request unless the information is strictly private, and the department would be quite helpless, so far as these cases are concerned, without the generous coöperation of the profession. In a word, the aim is to aid those who are affected, and to protect the well from infection; to do either most effectually, it is necessary to obtain the fullest information as to the conditions to be dealt with.

FREEDOM IN PRACTICE

THE most important matter now before the medical profession in Canada is the struggle to obtain freedom of practice in the nine provinces for all physicians who are properly qualified to practise in any one.

The present situation is singularly anomalous. There is a means by which reciprocity can be obtained between single provinces and parts of the Empire outside of Canada; there is none by which reciprocity can be obtained directly between the provinces themselves.

To remedy this curious state of affairs, an amendment to the Canada Medical Act, passed in 1902, and known as "The Roddick Bill," was offered in the Canadian House of Commons on November 28th, 1910, by Dr. J. B. Black, M.P., for Hants, at the request of Dr. Roddick, who is not now in the House, but is as much concerned as ever about putting into effect the complete provisions of his Act. The amending Bill was read for the first time, and was referred to a special committee which will meet at such a date as will give ample opportunity for all medical councils, which so desire, to make their opinions known. In the meantime, the Bill will be printed in French and English in anticipation of the second reading.

The moment seems opportune, therefore, to indicate for present information and future reference the various stages by which the actual position has been reached. The proposed legislation has nothing to do with reciprocity with England. It concerns only the provinces of Canada, yet the two questions were so bound up for a long time that they may best be considered together.

For ten years the attempt to obtain a full measure of reciprocity between Canada and England, or between the nine provinces themselves, has ended in failure. This was due to the fact that under the British North America Act of 1867, which governs the confederation of Canada, all matters

pertaining to education—elementary, scholastic, and professional—lie within the authority of the various provinces; and Quebec, which is French and Catholic, and in possession of a system of education peculiarly adapted to those conditions, has guarded this right with jealous care.

To all requests for reciprocity the general medical council of Great Britain made the obvious reply that the provinces of Canada should first agree among themselves in establishing one standard of entrance to the study of medicine, and one standard of final qualification. To this Quebec would not agree. That would be to surrender the inalienable right to the control of education.

To meet this difficulty, the Medical Acts Order of 1906 was passed by the Privy Council, under which each province of Canada was constituted a separate state for the purpose of negotiation. Nova Scotia and Prince Edward Island immediately applied. They granted, and received, a measure of reciprocity, under which their qualifications were registrable in Great Britain, and, therefore, in both provinces; and practitioners registered in England were free to practise in those provinces. Quebec also applied for, and offered, reciprocity. This was mutually agreed to, after provision had been made for adequate preliminary education, and to prevent a graduate, who had for cause been refused the Quebec license, from registering in England, and so evading the local regulations. It is now open to any province to apply for reciprocity with England.

In 1902, the Canada Medical Act was introduced in the Dominion parliament by Dr. T. G. Roddick, at that time dean of the medical faculty of McGill University, and member for St. Antoine Division of Montreal. It aimed at a "one-portal" system for entrance to the medical profession in Canada, and passed into law. But its operation was restricted by the provision that it would not go into effect until its terms were accepted by the legislatures of the nine provinces.

To remedy this disability, a suggestion was made at the

meeting of the Canadian Medical Association in Winnipeg in 1909, to the effect that, when five or more provinces agreed to accept the terms of the Act, a plan of registration for those provinces could be established. Quebec objected, on the grounds that it was being coerced by a threat of isolation; but eventually Quebec was satisfied, mainly by the provisions that the matter of preliminary education should be left in the hands of the provinces, and that the Dominion council should relegate to assessors the supervision of the primary examinations, as they are now held in the various universities.

In the original Act, it was provided that a properly qualified person who had been engaged for six years in the practice of medicine in any one of the provinces should be entitled to registration without examination. The amendment extended this period to ten years, and allowed to the medical council of any province, the privilege of exacting an examination in final subjects. The scheme of representation on the Dominion Medical Council, originally based on census returns, would, under the new proposal, give two representatives to each of the provinces and, on account of their greater size, one additional to Ontario and Quebec. The universities, as originally proposed, were to have one representative, and the Governor-General-in-Council was to appoint three members, each of whom should reside in a different province. In addition, there were to be three members elected by such practitioners in Canada as, by the laws of the province wherein they practised, were recognized as forming a particular and distinct school of the practice of medicine, and, as such, were by the same laws entitled to practise in the province. This clause apparently was intended to meet the views of persons who are known as "homœopaths."

Everything was in readiness for the passing of these amendments, which would have consolidated the profession in Canada, when the council of British Columbia demanded delay, and protested that it was unwilling to proceed before the proposals had been submitted to the entire body of the

profession in that province. As the time for presenting Bills had already nearly expired, there was no alternative but to postpone the introduction of the amended Act until the present session.

Meantime, Dr. Roddick, with a committee, was at work upon the subject. This committee was composed of members from each of the provincial councils, and met in Winnipeg in August, 1909, and again in Montreal in November, when every province but Saskatchewan and Alberta were represented. At the final meeting in Toronto in June, 1910, the representation was complete.

As a result of these deliberations a Bill was prepared, with the unanimous consent of the members of the councils of all the provinces, for submission to parliament. The main provisions are contained in the following clauses which we reproduce:

5. The purposes of the council shall be to promote and effect:

(a) The establishment of a qualification in medicine, such that the holders thereof shall be acceptable and empowered to practise in all the provinces of Canada.

(b) The establishment of a register for Canada of medical practitioners, and the publication and revision from time to time of such register.

(c) The determination and fixing of the qualification and conditions necessary for registration, the examinations to be undergone with respect to professional subjects only, and generally the requisites for registration. Provided that the council shall not determine or fix any qualifications or conditions to be compiled with as preliminary to or necessary for matriculation in the study of medicine and for the obtainment of the provincial licenses, these being regulated as heretofore by the provincial authorities.

(d) The establishment and maintenance of a board of examiners for examination and granting of certificates of qualification.

(e) The enactment, with the consent and at the instance of the medical councils of the various provinces of Canada, of such provincial legislation as is necessary to supplement the provisions of this Act and to effect the foregoing purposes.

7. The council shall be composed of:

(a) Three members who shall be appointed by the Governor-in-Council, each of whom shall reside in a different province.

(b) Two members representing each province, who shall be elected under regulations to be made in that behalf by the provincial medical council.

(c) One member from each university or incorporated medical college or school in Canada having an arrangement with a university for the conferring of degrees on its graduates, engaged in the active teaching of medicine, who shall be elected by the university or by such college or school under such regulations as may govern in that behalf.

(d) Three members who shall be elected by the homœopathic practitioners in Canada, each of whom shall reside in a different province.

(2) No one shall be a member of the council unless he,—

(a) Resides in the province for which he is an appointed or elected member;

(b) Is a duly registered member of the medical profession according to the laws of the province which he represents;

(c) Is duly registered as a medical practitioner in the register established under the provisions of this Act; but this latter qualification shall not be required of any of the members originally composing the council.

(3.) This Act shall not come into force until the legislatures of all the provinces shall have enacted legislation accepting its provisions; provided, however, that the medical board of any province may at any time order the withdrawal of the representation of the said province upon the council, by a resolution passed at a general or special meeting of the said

board called for the purpose and carried by the votes of two-thirds of the members present at the said meeting, and notice of which resolution shall have been inserted for three months previously in the *Canada Official Gazette*; and in case of such resolution being passed, the provisions of this Act will immediately cease to apply to the said province and no more persons shall be given the right to practise medicine within the jurisdiction of the said legislature by reason of their qualification or registration under this Act.

11. (g) The establishment, maintenance and effective conduct of examinations with respect to professional subjects only, for ascertaining whether candidates possess the qualifications required; the number, times and modes of such examinations; the appointment of examiners; and generally all matters incident to such examinations, or necessary or expedient to effect the objects thereof.

16. The subjects of examination shall be decided by the council, and candidates for examination may select to be examined in the English or French language. A majority of the committee conducting the examination of any candidate shall speak the language in which the candidate elects to be examined.

(2) Examinations may be held only at those centres at which there is a university or college actively engaged in the teaching of medicine or having hospital facilities of not less than one hundred beds.

18. Every one who passes the examination prescribed by the council, and otherwise complies with all the conditions and regulations requisite for registration as prescribed by this Act and by the council, shall, upon payment of the fees prescribed in that behalf, be entitled to be registered as a medical practitioner.

(2) Any person who has received a license or certificate of registration in any province previous to the date when the council shall have been first duly constituted under this Act and who has been engaged in the active practice of medicine

in any one or more provinces of Canada, shall, after ten years from the date of such license or certificate, be entitled to be registered under this Act as a medical practitioner, without examination, upon payment of the fees and upon compliance with the other examinations and regulations for such cases prescribed by the council. Provided that if the medical council of any province is not satisfied with the period of years prescribed by this subsection, such medical council may as a condition to provincial registration exact an examination in final subjects from practitioners registered under this subsection.

24. No amendment of this Act, or of the Act hereby amended, may be proposed on behalf of the council, unless previously accepted by the provincial medical councils.

15. At each annual meeting of the council, the council shall appoint a board of examiners to be known as the Medical Council Examination Board, whose duty it shall be to hold the examinations prescribed by the council, subject to the provisions hereinbefore contained.

It is to be hoped that the amending Bill concurred in by all the provincial councils and by the profession of the Dominion generally, and now in the hands of Dr. Black, will be passed by parliament unchanged.

Possibly too much is made of the machinery for the teaching of medicine, and too little of the teachers themselves. The writer of Bulletin 4 for the Carnegie Foundation for the Advancement of Teaching, that is, the one which deals with medical education in the United States and Canada, can scarcely contain his glee as he describes the equipment of the larger schools. Rather a neat case has been made upon the other side by *American Medicine*, where it is pointed out that Dr. Simon Flexner, brother of the writer of the Bulletin, is a graduate of one of those schools which is so utterly contemned; namely, the University of Louisville. According

to the Bulletin, "Laboratory facilities are inadequate in appointments and teaching force for the thorough teaching of the fundamental sciences to so large a student body. It has a large, scattered plant, unequal to the strain which numbers put upon it. . . . There are radical defects for which there is no cure in sight; the classes are unmanageably huge; the laboratories overcrowded and undermanned; clinical facilities, meagre at best, broken into bits in order to be distributed among the aggregated faculty. To carry the school at all, a large attendance is necessary; but a large attendance implies a low standard. The situation is thus practically dead-locked." The answer to this is that the University of Louisville, with all its theoretical imperfections, has sent forth a graduate of the eminence of Dr. Simon Flexner. In Canada, the Halifax Medical College has suffered a like condemnation. The answer again is the quality of the graduates. To give a specific instance, Dr. F. J. Shepherd, dean of the medical faculty of McGill University, who is even more eminent as anatomist and surgeon than Dr. Flexner is as a physician, made his first medical studies in Halifax.

Book Reviews

SURGERY OF THE BRAIN AND SPINAL CORD. By PROF. FEDOR KRAUSE, of Berlin. Translated by HERMAN A. HANBOLD, M.D., Clinical Professor in Surgery, Bellevue Hospital, New York. Reberman & Co., New York. Price \$6.00.

This volume is the first of two in which Krause proposes to publish the results of his experience in the surgery of the brain and spinal cord. In this first volume cerebral surgery alone is considered. For many years Krause has been widely known for his work in this branch of surgery, and the book here under review encloses within its covers a rich fund of experience. Let no one think, however, that he will learn much about the ætiology, diagnosis, or prognosis of cerebral lesions. Krause is concerned only, or chiefly, to describe his operative procedures. But this is done in no baldly descriptive or didactic way. It is rather an informal amphitheatre clinic, as it were, to the post-graduate student that he gives, with short references to causation, and to pathological details, and a full discussion of his methods of operating. Every principle is illustrated by an apt case-report, which is never too long, often, indeed, a bit short. Yet brevity is not a common fault in a German book. The number of reproductions in colour is amazing. Most of them are drawn from life, the patient not having left the operating table. They depict all sorts of pathological conditions and all stages of operations. It is a riot of luxury in illustration, but they are really well done; and if one can only supply a little knowledge and some imagination, they are also really useful.

In the space at our disposal it would be quite impossible to review adequately this work of Krause's. It is packed with personal experience. It is in no sense a text-book. The student would get but little out of it, the operating surgeon much. The author objects to the Gigli saw; he eulogizes the Doyen burrs and the Dahlgren forceps; he has discarded the trephine; he prefers osteoplastic flaps; he approves of Horsley's two-stage plan. These are a few expressions of his opinions, and the book is full of similar and more elaborate expressions upon all aspects of the subject. For its subject-matter one can only eulogize the work. Would that one could say as much of the translator's part.

A MANUAL OF PHYSIOLOGY, WITH PRACTICAL EXERCISES. By G. N. STEWART, M.A., D.Sc., M.D., Edin., D.P.H., Camb., Professor of Experimental Medicine in Western Reserve University, Cleveland.

land, etc. Sixth Edition, Demy 8vo., pp. xx., 1064, 449 illustrations with coloured plates. Price 18s. net. London, Baillière, Tindall and Cox.

Stewart's Physiology has always been a favourite with both teachers and students. It has been especially remarkable for its completeness. One cannot look through this last edition without feeling that it will maintain its high position among text-books for many years to come. Compared with the last edition, we find an increase of over 150 pages and half a hundred illustrations, and this in spite of the elimination of considerable matter that has been crowded out by more valuable material. The most extensive additions have been made in the chapters devoted to circulation, digestion, metabolism, and nutrition. Among the more important additions we would call attention to the following: in the chapter on circulation,—measurement of the blood pressure in man, conduction and coördination in heart, auriculo-ventricular bundle, chemical conditions of heart beat, and vaso-motor reflexes; in the chapter on digestion,—influence of central nervous system on gastro-intestinal movements, secretion, action of drugs on digestive secretions; in the chapter on metabolism,—formation of kreatin, extra hepatic glycogen, glycolysis, formation of fat from carbohydrates and from protein. The space devoted to internal secretions has been increased from twelve to twenty pages. In the chapter on electro-physiology, the human electro-cardiogram is figured and described. Under the central nervous system, sections are devoted to the influence of the brain on spinal reflexes and to the resuscitation of the central nervous system. Transplantation of tissues and parabiosis are among the new sections in the chapter on reproduction.

The practical exercises have been similarly extended. It is difficult to think of any recent advance in physiological knowledge of interest to medical students and physicians that is not adequately reported. One feels disposed to sympathize with the present generation of medical students as one considers how much they are expected to know, but we can certainly congratulate them on the possession of a text-book like this, in which so much is brought together for them in a single well-written volume.

A TEXT-BOOK OF BACTERIOLOGY. A PRACTICAL TREATISE FOR STUDENTS AND PRACTITIONERS OF MEDICINE. By PHILIP HANSON HISS, JR., M.D., Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, New York City; and HANS ZINSSER, M.D., Associate Professor in charge of Bacteriology,

Leland Stanford, Jr., University, Palo Alto, California. With 156 illustrations in the text, some of which are coloured. New York and London: D. Appleton & Co., 1910; Toronto: D. T. McAinsh & Co.

We doubt if in any subject of the medical curriculum the student is provided with so good and abundant a selection of reliable text-books as he is in the subject of bacteriology, and now there appears another excellent candidate for popular favour. Time must tell which becomes the elect of the student. There are at least five works upon the market at the present time, any of which can be recommended to the student who desires a good, general grasp of medical bacteriology. Each has its particular merits. As might be expected from the record of the author, the chapters upon methods of preparation of culture media and upon general technique are admirable. Another excellent chapter is that upon the destruction of bacteria, upon disinfectants and the methods of testing their efficiency, while, perhaps the most important feature in which the work stands out in advance of its competitors is the section of one hundred and forty pages devoted to the subject of immunity. The description of various pathogenic agents is concise and modern. The work ends with a valuable section upon diseases of unknown aetiology, chapters being devoted to rabies, small-pox, acute poliomyelitis, yellow fever, measles, scarlet fever, and foot-and-mouth disease. This is followed by a final section upon bacteria in air, soil, water, and milk, treated briefly. While the animal micro-parasites, as a body, are left out of account, the spirochetes are described in fair detail, on the ground that these are intermediate between animal and vegetable forms.

MODERN TREATMENT. THE MANAGEMENT OF DISEASES WITH MEDICINAL AND NON-MEDICINAL REMEDIES, IN CONTRIBUTIONS BY AMERICAN AND FOREIGN AUTHORITIES. Edited by H. A. HARE, M.D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia, assisted by R. H. M. LANDIS, M.D., director of the Clinical Department of the Phipps Institute. In two volumes. Vol. I, Lea & Febiger, Philadelphia and New York, 1910.

After carefully examining this handsome volume of over 900 pages, there is much to be pleased with in its presentation of modern therapeutics. In Part I, embracing the first 130 pages, Dr. H. C. Wood, Jr., discusses the value and limitations of experimental knowledge of the action of drugs, and the practical bearing which such knowledge should

have on therapeutics. An excellent chapter on prescription writing follows, which, from the number of prescriptions it contains, will be of great value to the young physician. The examples all appear to be well chosen, but we regret the writer did not use the metric instead of the apothecaries' system, or at least give the quantities in both systems. Dr. Rudolph's article on the untoward effect of drugs is carefully written.

In Part II, which embraces about 450 pages, the modern views on the treatment of disease by non-medicinal measures is clearly presented. The articles on climato-therapy, exercise, rest and the rest cure, hydro-therapy, dietary and nutrition, hygienic measures, serum vaccine, and glandular therapy, are all excellent papers and well worth reading. Pottinger writes on tuberculin as a therapeutic and diagnostic agent. They form a series of papers of high and well-maintained excellence.

Part III discusses the treatment of the several diseases due to infection, including rheumatism and pneumonia. It opens with a paper on the treatment of typhoid fever by Riesman of Philadelphia. While, on the whole, an excellent exposition of modern views, a few of his statements may be criticised. In reference to the tub bath he writes: "The world generally outgrows each of its advances, and I, personally, feel that to-day the management of typhoid fever has made large enough strides along other lines to warrant us in dispensing with the troublesome tub bath." Instead of it he recommends the Murphy treatment of intestinal irrigation and intestinal antiseptis. Of the latter he says: "Some deny them any antiseptic value, others are enthusiastic in their praise. My own faith in them is sufficiently strong to make one use them more or less regularly in severe cases. My preference is for phenyl salicylate (salol) in doses of from two and one-half to five grains three times a day." In reference to the value of such attempts at intestinal antiseptis, we would call attention to a statement of Langdon Brown's, that phelol compounds, by combining with the sulphates in the intestines, deprive the body of the capacity for rendering harmless those putrefactive substances, the formation of which they cannot altogether prevent. The only drug that Riesman uses in a routine way is dilute hydrochloric acid in doses of ten to fifteen minims every four hours, which he claims assists digestion and keeps the tongue moist. Death in typhoid fever in over ninety per cent. of cases is due to failure of the circulation. Until recently this failure was ascribed to the heart, but the work of the Leipzig school has made it clear that the vaso-motor system is the important factor. The vascular tension is always lowered in typhoid fever, and constant attention is necessary to anticipate a fall to a dangerous level. To

counteract this tendency, Riesman recommends the hypodermic administration of strychnine, the moderate use of alcohol, and, if necessary, the injection of normal salt solution under the skin. The article on tuberculosis is a most excellent one and details the modern views on the subject. This volume presents a series of carefully written papers and will, we are confident, be well received by the profession generally.

LA THERAPEUTIQUE, ECLECTIQUE, PHYSIOLOGIQUE, ET PHILOSOPHIQUE.

Par le Docteur D. E. LE CAVELIER, Montréal (Canada). Deuxième Edition. Paris, Librairie Basile, Editeur, 1910. Pp. 647.

This work is from the pen of a Montreal physician, and is a creditable testimony to the painstaking industry and originality of the author. The book is a large one; the diseases are taken up systematically, and their treatment, hygienic, dietetic, and medicinal, is fully given. French works on therapeutics are usually admirably complete in their consideration of hygiene and dietetics, and this of Dr. Le Cavalier is no exception. At the same time they are apt to appear strange to the English medical mind, chiefly, perhaps, on account of the unfamiliarity of the nomenclature and the vernacular prescriptions, and partly because of the constant recommendation of many mineral waters, and the great variety of drugs and artificial serums given subcutaneously.

The author's philosophy and physiology are very Inetchnikovian. The reader sometimes seems to leave the more solid ground of pathology and old-fashioned bacteriology to soar through an atmosphere of hormones, internal secretions, toxi-infections, auto-intoxications, and wonder-working leucocytes. The unimaginative physician gives calomel rather as a purge than to restore to the liver its anti-toxic power by stimulating the hepatic cells; while those accustomed to merely "watch" a case of typhoid, letting water, milk, time, nature, and the nurse do the work, will find the author's treatment rather vigorous. When a gargle is indicated, it seems an unnecessary refinement to prescribe two, the one aimed at the aerobic bacteria, the other at the anaerobic. Too much consideration, also, is given to the antiseptic virtues of the "aromatic ions" of the essential oils, not only in all bronchial and lung conditions, but even in other infectious diseases. Indeed, the sceptic reviewer must envy the author his faith in olfactotherapy and his confidence in opotherapy.

The work ends with a long appendix on the philosophy of nutrition, containing much valuable information, largely of a biochemical nature, though its usefulness is somewhat marred by being scattered in the antique and inconvenient form of aphorisms.

MEDICAL GYNÆCOLOGY. By SAMUEL WYLLIS BAUDLER, M.D., Adjunct Professor of Diseases of Women, New York Post-graduate Medical School and Hospital; Associate Attending Gynæcologist to the Bethrael Hospital, New York city. Second, Revised Edition; with Original Illustrations. W. B. Saunders Company, Philadelphia and London, 1909.

It will be generally admitted that the occasional appearance of books of this class on gynæcology is a good sign, as indicating a reaction, or realization, on the part of the profession that undue attention has been paid in the past to the operative side. In some books on medical gynæcology, the dividing line between what is strictly surgical, and what is medical, is not clearly defined. This charge may possibly be brought against Dr. Baudler's book, but it may be considered unimportant.

The work in question deals very fully and comprehensively with the subject. At the outset, a most careful description of methods of case-taking and physical examination is given. Then comes a description of methods employed in minor treatment. Here we notice a full description of atmocausis, the medication of the uterine cavity with live steam, with more of approval or commendation than most authorities are inclined to give this method. The treatment is by no means free from danger. Abdominal massage is described in detail, with several illustrations of the manipulations. All forms of baths are fully described, and the methods of application also well illustrated. The author is much impressed with the value of baths, and is especially enthusiastic about the results to be had from a course of Nauheim baths at home or in hospital. The water is medicated with sea salt, calcium chloride, and "triton" salts. The addition of the last mentioned results in setting free carbonic acid gas in the bath.

The disorders of menstruation and uterine bleedings are given a large share of attention, and their significance and treatment are admirably presented. In the treatment of amenorrhœa, ovarin and arsen-hemal are highly commended, especially for the chlorotic form. Leucorrhœa, as designating all discharge, other than blood, from the female genitals, receives well merited and thorough discussion. If patients and their doctors realized the full significance of certain leucorrhœal discharges, fewer cases of uterine cancer would be so far advanced as they ordinarily are when first seen by the gynæcologist.

A timely chapter is that on pain, its sources, situations, and significance. It is very easy for the careless practitioner to fail in a true interpretation of pain, as a symptom, and therefore to fail in relieving what is usually uppermost in the mind of the patient.

A very full discussion of sterility, so grievous to many married women, makes a valuable chapter. The many possible causes are set forth. Those in which the husband is at fault are emphasized. Frequent and painful micturition, the cardinal symptoms of cystitis, but also due to many other conditions, are given a due attention.

The associated nervous conditions in gynecology are dealt with in a chapter which is certainly one of the best in the book. The due and correct appreciation and interpretation of nervous disorders in the pelvic and abdominal lesions of women furnish many difficult problems for solution by the neurologist and the gynecologist. A careful study of this chapter will, we are confident, help much in their satisfactory solution.

The chapter on constipation, the next in the book, has been intrusted to Dr. George B. Mannheimer, whose methods in the treatment of this most common and often most obstinate complaint of women, have for a long time been adopted by the author. Its perusal will well repay every medical practitioner.

Fifty pages of the book are devoted to gonorrhœa in women and children. In the section on treatment, all the approved topical remedies are given their full share of attention; but we have failed to see any mention of vaccine therapy, which in children, especially, has yielded such brilliant results, as shown in a recent paper by Dr. Meakins, of Montreal, and a colleague. Topical treatment of gonorrhœa in children is so painful and distressing to parents, as well as to the little sufferers, that the vaccine treatment is hailed as a great boon.

After this brief notice of the earlier chapters of the book, limitation of space prevents more than an enumeration of the subjects of the others. These are: genital syphilis, vulvitis, vaginitis, cervical and corporeal endometritis and metritis, pelvic cellulitis and peritonitis, displacements of the uterus, uterine fibrosis and arterio sclerosis, carcinoma, chorioepithelioma, fibromyoma, the infections of the uterine appendages, ectopic gestation, and diseases of the ovary.

Bearing in mind the scope of this work, and its limitations, these subjects are as carefully treated as we have learnt to be the case in those dealt with in the earlier chapters. As is, perhaps, natural, considering the nationality of the author, most of the authorities consulted and referred to, are German. This book of 684 pages is altogether most satisfactory, and can most confidently be recommended to the specialist as well as to the general practitioner, for whom, perhaps, it is most intended. It contains many useful illustrations, and an exceedingly full and minute index.

DIAGNOSTIC THERAPEUTICS: A GUIDE FOR PRACTITIONERS IN DIAGNOSIS BY AID OF DRUGS AND METHODS OTHER THAN DRUG GIVING. By ALBERT ABRAMS, A.M., M.D., Consulting Physician to the Mount Zion Hospital, and the French Hospital, San Francisco; formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College. 1,039 pages; 198 illustrations. New York: Rebman Company. Price in cloth, \$5.00.

The author has dealt already with many subjects,—clinical diagnosis; the blues; man and his poisons; diseases of the heart; diseases of the lungs and pleura; consumption; and spondylotherapeutics—and upon each subject he has written a book. In the preface to the work under review, Dr. Abrams declares himself neither a therapeutic optimist nor pessimist, and “believes that more accurate clinical observations by means of objective signs would more surely establish a rational system of therapeutics.” The work is one neither on therapeutics nor on diagnosis. It has a special object in view. This, it would appear from the author’s preface, is to establish a rational system of therapeutics, sweeping away the therapeutic nihilism of the present, and correcting the conclusions based upon laboratory pharmacology alone; for Dr. Abrams holds that the action of drugs is to be decided by the crucial test,—their clinical application.

It appears to the reviewer, after reading the greater part of this book, that the profession made in the preface has not been faithfully adhered to throughout the work. Indeed, the title of the book itself is very misleading. To give but two examples: one can scarcely explain how a discussion of the ætiology of disease finds place under the title of diagnostic therapeutics; nor can one understand how a lengthy description and classification of cardiac murmurs materially aid in carrying out the original scheme suggested. The book is unduly large by reason of details, the omission of which would scarcely have detracted from the value of the work,—details known to any advanced student of medicine, and including matter more suitable for discussion under another title. Having made this adverse criticism, one must acknowledge that the author has brought together all the more important tests of functional efficiency of the various organs, and thereby has rendered considerable service to those who might otherwise be compelled to search for them through many texts and journal articles. While a careful investigation of many signs and methods of a host of writers has been described and approved, the author’s original investigations and observations have been modestly added.

"Diagnostic Therapeutics" is a book very well written, illustrated, and printed. It contains a great fund of information, with nearly four hundred references to authorities, clearly indicated in its bibliography, and will doubtless be found very helpful to the general practitioner as well as to the research student.

RADIUM THERAPY. By DR. LOUIS WICKHAM, Médecin de St. Lazaire, Ancien Chef de Clinique Dermatologique de la Faculté de Paris, Lauréat de l'Académie de Médecine; and DR. DEGRAIS, Chef de Laboratoire à l'Hôpital Saint-Louis, Lauréat de l'Académie de Médecine. Ouvrage Couronné par l'Académie de Médecine de Paris. Translated by S. Ernest Dore, M.A., M.D., Cantab., M.R., C.P.; with Introduction by SIR MALCOLM MORRIS, K.C.V.O. Illustrated with twenty Coloured Plates, and seventy-two Figures. Cassell & Co., Ltd., London and New York, 1910. Canadian Agents: D. T. McAinsh & Co., Toronto.

Radium therapy is so new a subject, and some of the facts brought out in the examination of the rays given off by radium and its salts have presented so much that tends to upset pre-conceived notions and ideas of the physical constitution of matter, that, to obtain a clear idea of the substance and the rays which it gives off, it is necessary to make a close study of its nature. The book under review is the best that has come under notice for the purposes of the members of the medical profession. It is a volume of 306 pages divided into three parts. Part I treats of the physics of the subject. Radio-activity and radio-active substances are considered, and in doing so the author deals with the nature and origin of radium, radium ore, the mechanical and chemical treatment for extraction, the chemical and physical properties, the divisions of the rays and their quantities, relative, proportion, and properties. This part of the subject is very fully treated.

Part II has to do with the use of instruments; radium emanation and mode of obtaining it; radiation and its employment; apparatus employed; analysis of radiation and methods of measurement.

Part III is the remainder of the book, and is divided into eleven chapters. The subjects of these are: clinical therapeutics, general considerations, therapeutic results in carcinomata and other malignant growths, cheloids, angiomas, pigmentary naevi; tuberculosis of skin and mucous membranes; analgesic action; pruritis and muco-dermatitis, eczema; application in various diseases; gynaecology; and the properties and advantages of radium therapy. A copious index follows. There are twenty coloured plates of the different diseases treated, before and

after treatment, showing the marvellous results obtainable. These are excellent prints and portray the hideous disfigurement, and again the smooth and almost unmarked condition of the surface when cured. The seventy-two illustrations in the text are of apparatus used, and some other representations of cases before and after treatment.

In gynaecological cases the authors recommend the use of radium for the purpose of arresting hæmorrhage and for exuberant granulations. In this way the granulations are considered destroyed, and the hæmorrhage kept under control. The work is a good, fair exposition of the whole subject, as known at present, and is full of hope for future results. The typographical work also is good.

THE PROPHYLAXIS AND TREATMENT OF INTERNAL DISEASES. Designed for the use of practitioners and of advanced students of medicine by F. FORCHHEIMER, M.D., Professor of Medicine, Medical College of Ohio, Department of Medicine of the University of Cincinnati; Physician to the Cincinnati and Good Samaritan Hospital, etc. Second Edition: New York and London. D. Appleton and Company, 1910. D. T. McAinsh & Co., Toronto, Canadian agents,

There have been a number of reprintings of this useful book since it appeared first, three years ago. The present edition is, however, to a considerable degree, a reconstruction; many chapters have been re-written and a number of additions made. Forchheimer's "Treatment" is a very popular book, and is perhaps the most widely used publication upon the subject in America. The reasons for this are not far to seek. The aim of the book is to put before the physician the best form of treatment of each disease. The author's experience leads him to put first what he considers best, and this leads him to adopt a concise, if somewhat authoritative, tone that is an advantage. The reader may or may not agree with the author upon his choice of remedy in any special disease; but the author does what he claims to do, and we venture to say that in most cases Dr. Forchheimer advocates the measures that are taught in all Anglo-Saxon Schools. That there are forty-five pages of index will show that the matter of the book can be readily reached. The appendix contains tables of food-values, poisons, a list of the most important drugs, and, finally, a goodly number of prescriptions. Without even indicating the changes that mark this edition, it is a pleasure to recommend this already well-known work.

Res Judicatæ

FEW things are more alarming and more dangerous in obstetrical practice than a postpartum hæmorrhage, or a hæmorrhage following delivery of the child in placenta prævia; and any new method of treatment must be welcomed which promises to be of service in such cases of sudden emergency. Two methods, one mechanical and the other medicinal, have been suggested within the past two years, and having proved their value by actual clinical experience, they can be confidently recommended to the profession. These are compression of the uterus by Momburg's tube, and the intramuscular injection of infundibular extract.

Hæmorrhage and shock often co-exist, and an essential factor, common to them both, is lowered blood pressure. In treating uterine hæmorrhage, our aim should be, not so much to prevent further loss of blood, as to combat the ill effects of the loss which has already been sustained. Many a life has been lost by the attendant's concentrating his efforts upon checking the bleeding, without taking thought of the disastrous effects of a lowered blood pressure. Both the Momburg's tube and the infundibular extract check hæmorrhage promptly, and at the same time raise the blood pressure markedly. The uterus, which was flabby and soft, becomes contracted and hard, and the pulse, which was thin, small, and irregular, becomes full, strong, and regular.

The Momburg tube: A strong rubber tube, the size of an ordinary colon tube, is thrown around the lower abdomen, just above the iliac crests, in from two to four turns, tightened up until the femoral pulse has almost, or entirely, ceased, and the ends secured by a knot. The pelvis should first be elevated to allow the intestines to slip upwards, so that the circulation in their vessels may be interfered with as little as possible. The tube should not be applied too high, for fear of damaging the viscera, or injuriously compressing the intestinal vessels. Care should be taken that the stomach and upper part of the small intestine are not distended with food. Some have recommended bandaging the thighs tightly with Esmarch bandages, after the pelvis is raised, and before the tube is applied. Compression need not be kept up more than fifteen minutes, as a rule, but it has been continued for three-quarters of an hour to an hour without injurious effects. When the tube is to be removed, it should not be taken off suddenly, but the

pressure should be relaxed gradually in order to avoid the danger of sudden cardiac depression.

The tube acts in a two-fold manner: (1) By directly compressing the abdominal aorta and the spermatic vessels, and thus making the lower half of the body practically bloodless, and (2) by causing firm contraction of a previously atonic uterus, as the result of the temporary arrest of its blood supply. This method of treatment has been found useful in cystic mole, postpartum hæmorrhage from an atonic or asthenic uterus, and in hæmorrhage after the birth of a child in placenta prævia. It is contra-indicated when there is any marked disturbance of cardiac function, as in non-compensated valvular disease, myocarditis, and arterio-sclerosis. Interruption of the aortic blood current is followed by a marked rise in the blood pressure, but it must be borne in mind that its restoration, especially if sudden, is apt to be followed by a still more marked cardiac depression. A medical friend reports an excellent result in a desperate case of atonic postpartum hæmorrhage, from the use of a Kelly strap thrown in three turns around the abdomen and tightened until the femoral pulse was obliterated. The strap was left in place for ten minutes, until a hot douche could be prepared and other measures taken for the control of the bleeding. No rubber tube was available at the time, and as minutes were precious, the strap was substituted and used as a tourniquet.

A case has been reported recently in which the Momburg tube not only failed to do any good, but actually did harm. The case was one of ruptured tubal gestation, and the Momburg tube was applied to prevent further hæmorrhage, while the woman was being taken to hospital in an ambulance. She complained of great pain as the compression was put on, and at the fourth turn she fainted. The bad symptoms passed off when the tube was removed. But such a case was obviously unsuitable for tube compression—the hæmorrhage was from the ruptured sac and not from an atonic uterus; and while compression would cause contraction in the muscular uterus, it could have no such effect in a ruptured tube.

Infundibular extract, or pituitary extract, obtained from the posterior lobe of the pituitary body, seems to be a more powerful agent in the treatment of uterine hæmorrhage than pituitrin, or extracts from the whole pituitary body. It has a special action on uterine muscle, causing an immediate, powerful contraction, which lasts longer than that produced by adrenalin, ergot, or any other drug. It also raises blood pressure and maintains it for hours, and is, therefore, valuable in the treatment of shock. It quiets and strengthens the heart, and, like digitalis and strophanthus, markedly increases the

urinary flow. In a severe case of postpartum hæmorrhage, massage and an injection of infundibular extract stopped the bleeding in from three to four minutes. In some cases of Cæsarean section, with free atonic hæmorrhage, one injection contracted the uterus at once, and the hæmorrhage ceased. The adult dose is 1 c.c., injected deeply into the muscular tissue to prevent sloughing from local vasco-constriction. It may be repeated in an hour or two if required; but a second dose is seldom required. The preparation used in the cases which have been observed personally, was the vaporole of Burroughs and Wellcome, containing 1 c.c. of infundibular extract.

Like the Momburg tube, the extract is a valuable means of combating hæmorrhage and shock, thus gaining time for other measures. Neither can supersede, or replace, saline infusions, whose function is to raise blood pressure by increasing the quantity of the circulating blood. Both methods are valuable because of their prompt and certain action, and they both seem to be most efficient in serious cases, just where they are needed most. The extract does not seem to have been so satisfactory when used as a prophylactic against hæmorrhage. A rubber tube and a few vaporoles would take up little room in the obstetric bag, and might be the means of saving life in an emergency.

"THIS evil of noisy, frantic gong sounding and speeding ambulance, is noticeable in Regina, and, before it gains a foothold, it should be prohibited. It is very rarely, indeed, that this furious hurry by doctor or ambulance driver means the saving of life. It smacks only of cheap notoriety and attention."—*Saskatchewan Medical Journal*.

Retrospect of Medicine

OBSTETRICS AND GYNÆCOLOGY

THE fifth International Congress for Obstetrics and Gynæcology was held at St. Petersburg, September 22nd to 28th, 1910. The reports of the prevalence of cholera—fortunately much overdrawn—materially affected the zeal of the 750 members who promised to attend, and only 350 put in an appearance, an unfortunate fact in view of the extensive preparations that had been made for their reception by the St. Petersburg profession. Professor von Ott, who has the fortune to be director of possibly the richest clinic in Europe—possessing an annual income of \$200,000 for 160 beds—had made the arrangements for the entertainment of the visitors, among whom were, as representing England and America, Dr. Routh, of London, and Dr. Davis, of Philadelphia.

There were four chief topics for consideration: (1) The treatment of inoperable carcinoma; (2) Cæsarean section, with reference to supra-symphyseal section and pubiotomy; (3) The vaginal route for gynæcological operations, and (4) Operative treatment of uterine displacements.

Mangiagalli, of Milan, opened the discussion on the question of carcinoma, laying down as postulates that treatment should be directed to prevent proliferation, promote necrosis, and provoke reabsorption of the tumour. He divided such treatment into, (a) by drugs—mercury, quinine, arsenic; (b) by extracts of internal organs—thyroid, etc.; (c) by ferments, trypsin, amylopsin, and organic extracts, as, nuclein, neurin, and pancreatin; (d) by bacteria, Coley's method with prodigious toxins; (e) by vaccines, such as Doyen's serum; (f) by physical methods, x-rays, radium, fulguration.

In his experience none of these methods were of much value. Jequirity had been satisfactory on external growths, but had been useless in carcinoma of the uterus.

Béatrix suggested the ligation of the large vessels leading to the tumour, and warned against curettage of the growth, except when accompanied by extensive cauterization on account of the danger of dissemination of the growth through the lymphatics.

Sticker, of Berlin, had obtained moderately good results with radioactive substances, particularly with radium carbonate.

Opitz, who has tried fulguration by the Keating-Hart method,

had found temporary good but later recurrence. He recommended the administration of potassium iodide internally, together with the application of powdered calomel to the tumour surface. This gave excellent results on account of the local formation of mercuric iodide. The use of serums he had found dangerous, possibly due to anaphylaxis.

Lourié had had markedly good results with radium and with fulguration in superficial growths and with certain tumours of animals, but on the whole his results were unsatisfactory.

The opinion of the congress seemed to be that early operation gave the only hope of cure, and of the various methods suggested for dealing with the incurable cases that of Opitz seemed to be the only one offering any possible result.

The discussion on Cæsarean section was opened by Bumm of Berlin, who spoke of the difficulties in technique of the various modifications of Cæsarean section, and pointed out that the infant mortality was greater in the newer operations than in the classical section, on account of the difficulty of extraction. He pointed out, too, the difficulty of operating entirely extra-peritoneally, and reported three deaths in thirty-three cases which had entered his clinic doubtfully, or certainly infected. Where no infection was present, he recommended the classical section as the easier, but on the other hand the cervical incision took away the possibility of the irritation of the peritoneum by the liquor amnii. Where infection was present, the supra-symphyseal section was dangerous, and the choice should rest between pubiotomy in multipara, or craniotomy. Where sections were performed, the mother's life paid for that of the child in five to ten per cent. of the cases. The presence of virulent bacteria made Cæsarean section dangerous in any case, and the choice of operation would depend on whether peritonitis or cellulitis was most feared.

Pestalozza preferred extra-peritoneal section when the membranes had ruptured, but believed that, in cases of undoubted infection, embryotomy was safer, unless the conjugate vera was so contracted that the child could not be extracted through the vagina; then, the Porro operation should be performed. For Cæsarean section he emphasized the necessity of the Trendelenburg position, the raising of the uterus out of the abdominal cavity, and the fundal incision of Fritsch. He had had 2.03 per cent. mortality in 109 cases, had operated on seventeen cases twice, and four cases three times.

Routh, speaking for the English profession, upheld the induction of premature labour with five per cent. mortality against any results of Cæsarean section. He reported that the English profession was opposed to pubiotomy on account of its high mortality, and claimed

that the only indication for this operation was when the head was fixed deep in the pelvis. Cæsarean section might be necessary when the diagonal conjugate was 6.2 cm. or less, if no infection was present. The extra-peritoneal section was practically unknown in England. Vaginal Cæsarean section had been performed by fifteen operators on thirty-two cases, with fourteen deaths, equal to 43.7 per cent. The operation was practically unnecessary. In certain cases of placenta prævia with a rigid cervix, where the Braxton-Hicks procedure could not be carried out, abdominal Cæsarean section might be justified, but it was rarely justifiable in eclampsia, as seventy-five per cent. of all these cases would recover, no matter what the treatment might be. Routh had collected 1,006 cases, 982 performed since 1890. The mortality was 9.8 per cent., and, of those within the last ten years, 8.3 per cent. The results showed a lessened mortality if the operation was done early in the labour.

Davis, of Philadelphia, who also took part in this discussion, reported seventy-seven cases, seventy-one on account of pelvic contraction. He brought little new to the discussion.

Döderlein condemned the results of extra-peritoneal section and pubiotomy, and blamed the unfortunate results of both operations on the great variety of technique used by the large number of operators whose results must be considered. He conceded that pubiotomy should not be employed in primiparas nor where the conjugata vera was less than 6.5 cm.; and that, where pubiotomy had been done, it was unwise to await spontaneous labour, as this gave a bad prognosis for the child. In cases of undoubted severe infection the abdomen should not be opened, but in doubtful cases the extra-peritoneal section was the operation of choice. All three operations, pubiotomy, extra-peritoneal section, and vaginal Cæsarean section were operations for use in the clinic; craniotomy should be done when the patient remained at home.

Opitz favoured the cervical incision rather than the classical section on account of the danger of permanent communication between the cavity of the uterus and the peritoneal cavity with the possibility of infection.

Sellheim reported forty-six cases with five maternal and six foetal deaths. He, too, pointed out the difficulty of comparing the results of so many operators. He also advised against section in the presence of severe infection.

Vandeveldt of Harlem reported thirteen pubiotomies with resulting increase in size of the pelvis in seven.

This discussion was extremely interesting, and the conclusions

drawn were fairly definite. Extra-peritoneal section is not to be looked on as an operation for any or all infected cases. The indications for pubiotomy have distinctly shrunk. Operators with the greatest technical skill look to all of these newer operations as procedures available for hospital and not for private practice.

The discussion on the third topic, correction of uterine displacements, was opened by Vandeveld, who suggested that any operation to be considered must be simple, safe, and afford opportunity for observing and treating any complications such as adhesions, and finally must result in a condition approaching the normal and should not interfere with child-bearing. One method was not suitable for all cases; and the three main methods were, inguinal fixation for uncomplicated cases, indirect ventro-fixation or combined vaginal fixation for complicated cases, and the direct vaginal or ventro-fixation for sterile patients. He suggested the advisability of a commission to consider the question, and this met with the approval of the congress.

Ilijin, of St. Petersburg, suggested median episiotomy as a prophylactic against uterine displacements. In nearly all confinements the perineum was damaged, though the tearing might be subcutaneous. An incised wound was easier to repair and the results were universally good.

Schabak spoke of the immediate results of operation for prolapse, and reported 156 cases examined subsequently with 94.6 per cent. of cures. The usual difficulty was the recurrence of cystocele. The ætiology of the condition was to be found undoubtedly in birth trauma; forty-five per cent. of cases occurred after the first birth, thirty per cent. after the subsequent birth, nineteen per cent. after menopause, six per cent. indefinite.

In the discussion it was pointed out that methods such as vaginal and ventro-fixation and also implantation of the uterus under the bladder caused definite and permanent change in the bladder; that the primary necessity was a repair of the submucosal fascia under the bladder in cases of cystocele, and that the nearer the result of the operation approached the original condition the better the permanent result.

Sellheim was most emphatic in the assertion that the deviation of the uterus *per se* was not a cause for operation, and also that elderly primiparas were particularly disposed to prolapse after the first pregnancy. The ill effect of advising the patients of a displacement of the uterus was forcibly pointed out, and the majority of the members of the congress were agreed that there was altogether too much operating. The newer method of correcting displacement by shorten-

ing the round ligaments or suturing them across the recti was not discussed.

The fourth topic, the vaginal route in gynaecology was opened by Professor Martin of Berlin. He spoke of the great improvements made in operative methods, particularly the technique of laparotomy, but contended that these were offset by the advantages of the vaginal route when the field was lighted directly in the method suggested by von Ott. The great difficulty was supposed to be the ligation of the vessels, but he had operated on two thousand cases with practically no difficulty. The morbidity and mortality were undoubtedly less than that of laparotomy, and hernia did not result. Martin preferred laparotomy in cases of acute, ectopic gestation where diagnosis was difficult, but insisted on the necessity for choosing one or other route and not combining the two.

Fraenkel was in favour of the vaginal route for drainage, but considered it unsatisfactory for the removal of appendages. The number and variety of cases reported on from St. Petersburg showed undoubtedly the influence of von Ott; for example, Korobkof reported twelve ovarian cysts removed *per vaginam* during pregnancy, with the subsequent normal labours. Werbof reported four appendectomies, and Kiparski forty-four myomectomies. Jacobson contended that, in ectopic pregnancy, the vaginal route was best, instancing 107 cases without a death, whereas in 108 laparotomies there were ten deaths. It was advisable to remove the tube, and this could best be done by the vaginal route. Markowski reported 390 vaginal operations on diseased appendages with 1.3 per cent. mortality, as compared with 10.02 per cent. mortality in 762 laparotomies in similar cases. The results in myomectomies *per vaginam* were forty-four cases and no deaths, and forty-nine cases with 14.28 per cent. mortality in laparotomy. Von Ott contended that the asepsis was better in operations by the vaginal route; that the organisms were few in number, and not virulent; that there was no danger of infection from neighbouring organs; that the possibility of infection was lessened by the fact that instruments and not the hands were used; that neighbouring organs were never subjected to trauma; and, finally, where it was difficult to ligate the vessels these could be fixed with a clamp which might be left *in situ*. Shock was less than when the abdomen was opened.

These results will, no doubt, seem strange to many Canadian readers, and must be taken as giving the strongest possible case for the vaginal route as laid down by one of its strongest advocates. It is noteworthy that of the distinguished Germans present, namely, Doederlein, Sellheim, and Fraenkel, only the last named took part in

this discussion, and he was undoubtedly opposed to the views laid before the congress.

Of other topics of interest it may be mentioned that the Bossi dilator was heartily condemned as a means of delivery in placenta prævia or in primiparæ with rigid cervix, and that further results were brought forward showing the advantage of the immediate delivery of eclampsics. Beckmann of St. Petersburg reported 210 cases with thirty-four per cent. mortality with expectant treatment, and but 12.4 per cent. mortality where the patients were immediately delivered.

"A GREAT deal of literature has been distributed casting discredit upon the value of vaccination in the prevention of small-pox. I do not see how any one who has gone through epidemics as I have, or who is familiar with the history of the subject, and who has any capacity left for clear judgement, can doubt its value. Some months ago I was twitted by the editor of the *Journal of the Anti-Vaccination League* for 'a curious silence' on this subject. I would like to issue a Mount Carmel-like challenge to any ten unvaccinated priests of Baal. I will go into the next severe epidemic with ten selected, vaccinated persons and ten selected, unvaccinated persons. I should prefer to choose the latter—three members of parliament, three anti-vaccination doctors, if they could be found, and four anti-vaccination propagandists. And I will make this promise—neither to jeer nor to jibe when they catch the disease, but to look after them as brothers, and for the four or five who are certain to die I will try to arrange the funerals with all the pomp and ceremony of an anti-vaccination demonstration."—William Osler in the *American Magazine*.

Army Medical Service

AS an indication of the development of medico-military work in Canada, it is worthy of note that a course of instruction in the duties of the medical staff will be held in Ottawa in April. This course, the conditions of which are provided for in Militia Order 473 of December 24th, is designed to train medical officers in the work pertaining to administrative duties in the field.

It is by no means an easy matter for the civil practitioner, when called out for training or mobilization, to become at once a military administrator. There are so many questions concerning organization, strategy, and tactics, and military matters in general, that are of such importance, not only to the Medical Service but to the force generally, that the medical man is apt to lose his bearings and find himself unable to cope with his work. This course, then, is an endeavour to direct the attention of senior officers to the importance of this work, so that they may be in a position to perfect themselves in their many duties.

The schedule of course is as follows: 1. General organization and administration of troops in the field; the principles of strategy and tactics; military topography, sketching, and map-reading. 2. Medical organization and administration in the field; medical equipment and supplies; medical transportation; the laws and customs of war in relation to the sick and wounded; and the principles of medical strategy and tactics. 3. Military hygiene; duties of sanitary officers; the use of field sanitary equipment; and the study of sanitary problems connected with troops in the field. Instruction will be carried out by means of lectures, demonstrations, and problems, practical work in the laboratory and medical stores; staff tours and tactical exercises.

THE fifth annual meeting of the Association of Medical Officers of the Militia will be held at Ottawa on Thursday and Friday, February 23rd and 24th. The president is Lieut.-Colonel G. S. Rennie, A.M.C., of Hamilton; and the secretary is Captain T. H. Leggett, A.M.C., of Ottawa. Major A. T. Shillington, A.M.C., is the chairman of the local committee of arrangements. Amongst the items on the programme is a war game in medical tactics, the medical officers in Montreal being pitted against those in Toronto.

THREE officers of the Permanent Army Medical Corps are now undergoing instruction in the department of hygiene at McGill University, namely, Major H. M. Jacques, who is taking the course for the diploma of public health, and Captains Clarke and Potter who are taking a course to enable them to take the promotion examination for the rank of major.

A VETERINARY service is to be formed in connexion with the Canadian militia. The new service will consist of three branches, the Canadian Permanent Army Veterinary Corps, the Canadian Army Veterinary Corps, and the Regimental Veterinary Service, the latter to include the veterinary officers at present in the regimental staff of the mounted corps.

Personal

DR. J. S. HELMCKEN, who for many years has been government physician of the provincial jail at Victoria, is to retire. Dr. Helmcken has been identified with the public service of British Columbia for over fifty years, and is the last surviving member of the first legislature of that province.

AMONG the Fellows recently elected to the Royal College of Surgeons of Edinburgh appears the name of Dr. A. I. Mader, of Halifax. Dr. Mader graduated from McGill in 1891, and has since practised in Nova Scotia.

News

THE reports of the Boards of Health for Parry Sound and Orillia show that, during the past year, there was little contagious disease in either of these towns.

THE report of the Medical Health Officer of Owen Sound, for 1910, shows that there was very little infectious disease in that town during

the year. Tuberculosis caused twenty deaths; cancer, eight; and infantile paralysis, one.

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about \$180, will be made on July 14th, 1911, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and must be received by the secretary of the college, Thomas R. Neilson, M.D., on or before May 1st, 1911. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay, or a copy of it, shall remain in possession of the college; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1910 has been awarded to Dr. M. Katzenstein, of Berlin, Germany, for his essay entitled, "The Formation of an Arterial Collateral Circulation in the Kidney."

THE following congresses, conferences, and exhibitions are announced for 1911: February 20th-25th (Cairo), Fifth International Congress for the Blind; March 2nd-6th (Berlin), Thirty-second Balneological Congress; April 4th-7th (London), Fourth Annual Nursing and Midwifery Conference and Exhibition; April 19th-22nd (Wiesbaden), Twenty-first German Congress of Internal Medicine; May-October (Dresden), International Hygiene Exhibition; May-October (London, Crystal Palace), Festival of Empire Imperial Exhibition; June (Paris), First Congress of the International Medical Association for the Prevention of War; June and July (Romford), Town Planning and Modern House and Cottage Exhibition; July (Birmingham), British Medical Association; July 24th-29th (Belfast), Congress of the Royal Sanitary Institute; August or September (Berlin), Third International Laryngo-Rhinological Congress; September (Brussels), Exhibition of Fractures; September 11th-16th (The Hague), Thirteenth International Congress on Alcoholism; September 18th-23rd (Sydney), Australasian Medical Congress; September 24th-30th (Rome), International Congress on Tuberculosis; September 25th-29th (Rome), Seventh International Congress of Dermatology and Syphilology; October (Cologne), International Congress of Criminal Anthropology.

MEDICAL inspection will be enforced in the public schools of Brandon during this term. In a report for Alexandra School, enquiring into cases of uncorrected eye weakness, deafness, mouth breathing, pronounced dulness, and weak mentality, it was found that out of 325 pupils fifty-eight needed attention.

THE report of the Board of Health for Port Arthur shows that, during the past year, the unsanitary conditions existing in the muskeg districts within the city's borders have proved a menace to general health. The Board advocates an improvement, particularly in this district, in methods of sanitation. There was a small outbreak of scarlet fever in the city during December.

A MEETING of representatives from the different towns in the county of Cape Breton, was held at Sydney, for the purpose of considering the small-pox situation throughout Cape Breton. After a discussion, which lasted nearly three hours, the meeting dissolved, having passed a resolution to the effect that the warden call a meeting of the mayors of the different towns, and the health officers, in order that the situation might be more fully discussed.

THE Provincial Board of Health of the Province of Ontario will hold a public health exhibit in connexion with the Canadian National Fair held annually in Toronto beginning about the end of August. In addition to the exhibit there will be daily fifteen-minute lectures with lantern demonstrations upon various subjects relating to public health and prevention of disease. Firms desiring to contribute are advised to communicate with John W. S. McCullough, M.D., Chief Health Officer of Ontario, Parliament Buildings, Toronto.

Obituary

DR. GEORGE J. BULL, of Paris, died December 31st, 1910. Dr. Bull was born in Hamilton, and graduated from McGill College in 1869. After several years' practice in Canada, Dr. Bull went to Massachusetts, but there his health failed, and he was compelled to seek the

warmer climate of Colorado. After eight years in that state, Dr. Bull went to Paris where he engaged in ophthalmology, and rapidly built up a large practice.

DR. L. A. LAPALME, of Montreal, died at his home on December 28th, 1910. Dr. Lapalme was born at Belœil, and practised medicine at Lewiston, Swanstead, and Ste. Anne de Bellevue, Quebec. Dr. Lapalme came to Montreal in 1908.

DR. RAYMOND HAWESWOOD PHILLIMORE, who for a number of years was medical school inspector for Montreal, died from cancer of the throat, on December 28th, 1910. Dr. Phillimore was born in Smeaton, near Nottingham, England, and was educated at Queen's College, Oxford. He came to Canada in 1884, and graduated in medicine from McGill in 1892. Dr. Phillimore then returned to Cookshire, where he practised until 1902. For some time he acted as surgeon on a ship from England to African ports, but returned again to Canada and settled in Montreal. Dr. Phillimore was prominent in military circles, and was for some years surgeon of the 58th Battalion, Compton County, and afterwards of the 7th Hussars. In addition to his professional activities, Dr. Phillimore was well known as a writer on various subjects.

DR. FRANK BARTWICK LUNDY, of Portage la Prairie, died suddenly at his home on December 26th, 1910. Dr. Lundy was born in Sheffield county, Ontario, in 1860, and received his early education at Galt. He began his medical studies in 1877 at Trinity College, Toronto, and graduated from that institution in 1880. After his post-graduate work, Dr. Lundy began practice in Dungannon, Ontario, where he remained until 1882, when he went to Portage la Prairie. There he practised until his death. Dr. Lundy was the eldest son of the late Dr. L. B. Lundy, of Galt, and a brother of Dr. J. E. Lundy, of Portage la Prairie.

NOTICE has been received of the death of DR. E. A. S. CARRINGTON, of Georgetown, Barbadoes. Dr. Carrington received his preliminary education in the United States, graduated from McGill University with the degree of M.D., in June, 1909. He also studied in the Liverpool School of Tropical Medicine, and on returning to his home in Georgetown was appointed to the public hospital there. He developed a severe attack of appendicitis, and although operation was promptly performed, he died October 15th, 1910. He was thirty years of age.

Canadian Literature

ORIGINAL COMMUNICATIONS

The Canada Lancet, January, 1911:

- Affection of the Tubercle of the Tibia . . . B. E. McKenzie.
Medical Thoughts, Fads, Facts, and Foibles . . . James S. Sprague.
The Treatment of Acne Vulgaris, Acne Keloid,
Acne Rosacea . . . W. H. B. Aikins.
Some of the Aetiological Factors in Insanity,
also a few Remarks on Expert Evidence . . . C. K. Clarke.

Le Journal de Médecine et de Chirurgie, December 10th, 1910:

- Rupture du tendon sus-rotolien . . .
Eugene Saint-Jacques et Alexandre Saint-Pierre.

The Canadian Practitioner and Review, January, 1911:

- Recent Observations on the Therapeutic Use of
Radium . . . W. H. B. Aikins and F. C. Harrison.
Tuberculosis of the Optic Nerve . . . Colin Campbell.

Le Journal de Médecine et de Chirurgie, December 24th, 1910:

- L'enseignement médical . . . MM. Carvadias and St. Jacques.
Interets professionnels . . . Albert Laurendeau.

L'Union Médicale du Canada, January, 1911:

- Comment diminuer la mortalité infantile . . . M. Gagnon.
Nos sociétés Médicales—La loi médicale . . . M. Laurendeau.

Saskatchewan Medical Journal, November, 1910:

- Fissura Ani; Its Diagnosis and Treatment . . . J. F. Saphir.
Notes on Surgical Cases with Pathological Specimens . . . Andrew Croll.

L'Union Médicale du Canada, December, 1910:

- A propos du traitement de l'éclampsie puerperale, Albert Lesage.
Comment diminuer la mortalité infantile . . . Eugene Gagnon.

Maritime Medical News, November, 1910:

- Ætiology of Caisson-Disease P. Conroy.
Two Cases of Acute Intestinal Obstruction . A. B. Atherton.

Dominion Medical Monthly, January, 1911:

- The Diseased Tonsil and its Effect upon the
General System. W. P. Caven.

Medical Societies

MONTREAL MEDICO-CHIRURGICAL SOCIETY

THE eighth regular meeting of the society was held on Friday evening, January 20th, 1911. The programme consisted of an exhibit of votive offerings from the Temple of Æsculapius (Kos), which had been gathered in Rome by Dr. Wm. Osler, and presented by him to the McGill Medical Library. Dr. F. G. Finley showed the exhibit.

The following pathological specimens were shown by Dr. O. C. Gruner, of the Royal Victoria Hospital:

1. Syphilis of Liver. The liver is strikingly deformed in shape, owing to atrophy of its right lobe, which is hard and fibroid, and has a nodular surface. It was strongly adherent to the surrounding structures. The left lobe is about as large as a normal liver, and its surface is puckered. Two small nodules, having the characters of gummata, can be seen. The posterior surface was also puckered. From a case which died of uræmia there was a history which justified the diagnosis of syphilis. The kidneys were granular.

2. Double Fusiform Aneurismal Dilatation of Aorta. The aorta shows a marked increase in its circumference, which constitutes an aneurismal dilatation in two places. The first one is in the first part of the aorta, and the second is just beyond the arch, in the descending aorta. There was a large clot in each situation, and the arterial wall is seen to be remarkably extensively diseased. This is from a case of pneumonia, in which there was no evidence of aortic disease, either clinically or subjectively.

3. Aneurism of Arch of Aorta, Rupturing into Œsophagus. The specimen shows a small aneurism situated about the highest part of the arch. It is saccular, and has only a small orifice into the aorta. There is a very small opening into the œsophagus at the back of the specimen.

There are a few scars, with raised edges, in the aorta beyond the aneurism.

Dr. A. Laphorn Smith exhibited a pathological specimen of sarcoma of the ovary.

A lantern demonstration on diseases of the skin was given by Dr. F. J. Shepherd, showing conditions of fibroma molluscum, blastomycosis, lupus, syphilis, herpes zoster, psoriasis, feigned eruptions, and congenital naevi,—the verrucoid, pigmented, wine stain, etc.

Dr. W. W. Chipman read a case-report, "A Ruptured Ectopic Gestation Occurring in the Third Week of Typhoid Fever and Complicated by Typhoid Perforation of the Ileum." Dr. Hargrave, under whose care the patient had been before admission to the hospital, discussed the case.

The paper of the evening was read by Dr. Maude E. Abbott upon "Original Contributions of Women to the Art and Science of Medicine." The following is a synopsis:

Historical aspects of interest. Customs among primitive peoples. Medical women in the Græco-Roman period: Antiochus of Tlos. In mediæval Europe: Trotula of Ruggiero, Abbess Hildegard, Lady Montague, Mme. de Hilden, etc. The great midwives of France: Louise Bourgeois, Mme. Lachapelle, Mme. Boivin. Women in Hospital Reform. Modern medical research by women.

TORONTO ACADEMY OF MEDICINE

A MEETING of the Academy of Medicine was held in the biological department of the University of Toronto, January 3rd, 1911, the president, Dr. Albert A. Macdonald, being in the chair. Dr. J. F. W. Ross, one of the trustees, explained briefly to the meeting that the new home of the academy would probably be ready for occupancy about the middle of February, when it was proposed to hold a conversazione to mark the occasion.

The paper of the evening was read by Dr. George E. Armstrong, of Montreal, and was on "The Surgical Treatment of Diseases of the Stomach." Dr. J. F. W. Ross opened the discussion. He was followed by Dr. W. W. Jones. Dr. A. McPhedran, who next discussed the paper, pointed out that hæmorrhage at the base of a gastric ulcer was most amenable to treatment. In his experience few cases of hæmorrhage from the stomach required operation. He believed that in certain cases it was necessary to open the stomach and find the bleeding point, and

deal with it in the way suggested by Dr. Armstrong. He wished to know when a gastro-enterostomy should be done. He thought that perhaps more favourable results might be obtained, in cases requiring operation, if the opening were made in the antrum of the stomach.

Dr. H. A. Bruce questioned the wisdom of a gastro-enterostomy in all cases of gastric hæmorrhage where surgical interference was indicated. He believed that in small, frequently-repeated hæmorrhages, gastro-enterostomy was of value, as indicated by Dr. Armstrong, and agreed that ligation or excision was best as a routine procedure. X-ray shadowgraphs, in various stomach conditions, would probably be useful, or a bismuth meal and cinematograph pictures following. Drs. G. E. Wilson, H. B. Anderson, and N. A. Powell also discussed the paper.

In replying, Dr. Armstrong emphasized the fact that from ninety-five to ninety-seven per cent. of cases of hæmorrhage from the stomach were ordinarily amenable to medical treatment. In the other three to five per cent., surgical interference might be necessary; and ligature or excision, with pyloroplasty, to lessen peristaltic waves and prevent any possibility of stenosis, was indicated. Mr. I. H. Cameron moved a vote of thanks to Dr. Armstrong. This was seconded by Dr. A. Primrose, and carried.

CANADIAN HOSPITAL ASSOCIATION

THE annual meeting of the Canadian Hospital Association will be held at the Clifton House, Niagara Falls, on May 23rd and 24th. During the same week it is expected that the association of superintendents of training schools for nurses and the Ontario graduate nurses' association will also meet. The following is the preliminary programme:

Dr. Charles Hastings, medical health officer, Toronto,—“The Relation of the Medical Health Officer to Hospitals;” Dr. N. H. Beemer, superintendent of the hospital for the insane, Mimico,—“The Care of Alcoholics;” Dr. Gibson, Belleville,—“The Organization of the Medical Staff in the Smaller Hospitals;” Mr. Clarence Williams, Boston,—“The Heating and Ventilation of Smaller Hospitals;” Dr. Bruce Smith,—“A Word to Trustees of Hospitals;” Miss Lillian Uren, St. Catharines,—“An Exhibit of Useful Devices for Hospital Work;” Mr. H. E. Webster, Royal Victoria Hospital, Montreal,—“Important Points in the Construction of Smaller Hospitals;” Dr. J. S. Hart, Toronto,—“What the Average Medical Man Expects from the Hospital;” Miss Conroy, superintendent St. Joseph's Hospital, Glace Bay, N.S.,—

"The Duty of the Hospital to the Pupil Nurse;" Miss Dela Mater, superintendent Nicholl's Hospital, Peterboro,—*"Some Impressions of New York Hospitals;"* Dr. Kendall, physician-in-chief, Muskoka Sanitarium, Gravenhurst,—*"Some Observations on Sanatoria of the Old Country;"* Dr. W. J. Dobbie, physician-in-chief, Weston Sanitarium,—*"Prevention of Fire."*

Addresses, titles of which cannot yet be announced, are also to be delivered by Miss McLennan, Barrie; Miss B. Miller, St. Thomas; Dr. Wayne Smith, superintendent of the Washington University Hospital, St. Louis, Mo.; Dr. Frederick Washburn, superintendent Massachusetts General Hospital; and Dr. Young, assistant at Rockwood Hospital for the Insane, Kingston.

SASKATOON MEDICAL ASSOCIATION

At the annual meeting of the Saskatoon Medical Association, held on December 9th, 1910, the following officers were elected for 1911: president, Dr. Daran; vice-president, Dr. Young; secretary-treasurer, Dr. Morse; auditor, Dr. Walker.

WEST ELGIN MEDICAL ASSOCIATION

At the regular monthly meeting of the West Elgin Medical Association held on December 21st, 1910, the following officers were elected for 1911: president, Dr. Patterson; vice-president, Dr. Crane; secretary, Dr. F. S. Macpherson. At this meeting a paper on acute anterior poliomyelitis was read by Dr. Crane, and at the conclusion of the discussion a resolution was passed advising the West Elgin Board of Health to enforce isolation of cases of infantile paralysis coming under their jurisdiction.

THE next annual meeting of the Canadian Medical Association will be held June 7th, 8th, and 9th in Montreal. It will immediately follow the McGill convocation and reunion, when the new medical buildings of the university are to be formally opened. It is expected that the coming meeting in Montreal will be largely attended. Advantage is taken of this announcement to urge upon all intending contributors to the scientific programme the necessity of sending in the titles of their papers, as soon as possible, to the general secretary, Dr. Edward Archibald, 160 Metcalfe St., Montreal.